

Grade 4 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 100000 Count on/back in equal steps (e.g. 25, 100) including beyond zero Round any three- or four-digit number to nearest 10 or 100 Recall addition and subtraction facts for each number up to 20 Add/subtraction any pair of two-digit numbers, including crossing 100	Find pairs with sum of 100; derive multiples of 50 with a sum of 1000 Double or halve any whole number of 100 Recall facts in times x2, x3, x4, x5, x6, x10 tables and derive division facts Begin to recall facts in x7, x8, x9 tables, squares to 10x10 Multiply or divide whole numbers up to 10000 by 10 or 100

Topic	Objectives: children will be taught to
Place value, ordering, rounding Using a calculator	Read and write whole numbers in figures and in words and know what each digit represents. Multiply and divide any positive whole number up to 10000 by 10 or 100 and understand the effect. Use the vocabulary of comparing and order numbers Give one or more numbers lying between two others Develop calculator skills and use a calculator effectively
Understanding x and ÷ Mental calculation strategies (x ÷) Pencil and paper procedures (x ÷) Money and 'real life' problems Making decisions, checking results, including using a calculator	Understand the effect of and relationships between the four operations, and the principles of the arithmetic laws as they apply to multiplication Use doubling/halving: double any two-digit number, halve an even number, double the other, multiply by 25 by x100, then ÷ 4; multiply by 16 by x8, then double; find 1/6 by halving 1/3 Approximate first. Use informal pencil and paper method to support, record or explain x and ÷ Extend written methods to HTU x U or U.t x U Use all four operations to solve money or 'real life' word problems Choose appropriate operations/calculation methods. Explain working Check by estimating. Use inverse operation
Fractions, decimals and percentages Ratio and proportion	Use fraction notation, including mixed numbers and vocabulary numerator and denominator Change an improper fraction to a mixed number Recognise simple equivalent fractions, including tenths and hundredths Use decimal notation for tenths and hundredths, know what each digit represents in numbers with up to two decimal places. Begin to understand percentage as the number of parts in every 100 Solve simple problems involving ration (one for every)
Handling data Using a calculator	Discuss chance or likelihood Present and interpret data on a bar chart and bar line graph: axis in 2s, 5s, 10s, 20s, 100s. Recognise when intermediate points have no meaning Make a simple database on paper. Identify the mode.
Assess and review	

Read and write whole numbers to at least 100000 Count on/back in equal steps (e.g. 25, 100, 0.1) including beyond zero Round any three- or four- digit number to nearest 10 or 100 Recall addition and subtraction facts for each number up to 20 Add/subtract any pair of two-digit numbers, including crossing 100	Double any whole number to 100 and multiples of 10 to 1000 Recall facts in x2, x3, x4, x5, x6, x10 tables and derive division facts Begin to recall multiplication facts in x7, x8, x9 tables, squares to 10 x 10 Multiply or divide whole numbers up to 10000 by 10 or 100 Convert metres to centimetres and £ to pence and vice versa
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Shape and space Reasoning about shapes Measures, including problems	Identify and recognise properties of rectangles Classify triangles, isosceles, equilateral, scalene, lines of symmetry Recognise positions, read and plot co-ordinates in first quadrant Solve shape puzzles. Explain methods and reasoning orally and in writing Understand, measure and calculate perimeter of rectangles, regular polygons. Measure and draw lines to nearest mm Use, read and write standard metric units of length, abbreviations and relationships. Convert larger to smaller units of length. Know mile. Read the time on 24 hour digital clock, e.g. 19:53 Suggest suitable units/equipment to estimate or measure length. Record estimates/measurements from scales to suitable degree of accuracy Use all four operations to solve measurement word problems, including time. Choose appropriate operations/calculation methods. Explain working.
Mental calculation strategies (+ -) Pencil and paper procedures (+ -) Money and 'real life' problems Making decisions, checking results, including using a calculator	Find difference by counting up through next multiple of 10, 100, 1000 Partition into HTU and add most significant digits first Use informal pencil and paper methods Extend written methods +/- of two integers less than 10000 Use all four operations to solve money of 'real life' word problems Choose appropriate operations/calculation methods. Explain working Check calculations using inverse operation, including with calculator
Properties of numbers and number sequences Reasoning about numbers	Recognise and extend number sequences formed by counting from any number in steps of constant size, extend beyond zero when counting back. Know squares to at least 10x10. Identify factors of two-digit numbers Solve mathematical problems or puzzles. Recognise patterns, generalise.
Assess and review	

Grade 4 Math Curriculum

Winter 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 to at least 100000 Count on/back in equal steps (25, 100, 0.1, 0.2), including beyond zero Round decimals to nearest whole number. Order fractions Recall addition and subtraction facts for each number up to 20 Add/subtract any pair of two-digit numbers, including crossing 100	Find pairs with sum of 100, multiples of 50 sum 1000, decimals sum 1, 10 Use doubling to multiply two-digit numbers by 4. Halve any two-digit number. Recall facts in x2, x3, x4, x5, x6, x10 tables; derive division facts Begin to recall facts in x7, x8, x9 tables and begin to derive ÷ facts Multiply or divide whole numbers up to 10000 by 10 or 100
Topic	Objectives: children will be taught to
Place value, ordering, rounding	Use symbols $< = > \leq \geq$ Order a set of whole numbers less than 1 million Order positive and negative integers (number line, temperature) Develop calculator skills and use a calculator effectively
Using a calculator	
Understanding x and ÷ Mental calculation strategies (x ÷)	Begin to use brackets Use factors Use closely related facts (derive x19 from x20, x12 from x10 add x2) Partition, e.g. 47 x 6 Extend written methods to HTU ÷ U (whole number remainder) Convert € to foreign currency Use all four operations to solve money or 'real life' word problems Choose appropriate operations/calculation methods. Explain working Check with inverse operation or equivalent calculation.
Pencil and paper procedures (x ÷) Money and 'real life' problems Making decisions, checking results, including using a calculator	
Fractions, decimals and percentages	Order a set of fractions including mixed numbers, position on a number line Relate fractions to division and find simple fractions, including 1/10 and 1/100 of numbers and quantities Order a set of numbers of measurements with same number of decimal places Round a number with one or two decimal places to the nearest integer Use a calculator effectively, e.g. to convert fractions to decimals, to find fractions of numbers
Using a calculator	
Shape and space Reasoning about shapes	Visualise 3-D shapes fro 2-D drawings and identify nets of open cube Recognise directions and perpendicular and parallel lines Understand and use degrees Identify, estimate and order acute and obtuse angles to 5 Make patterns from rotating shapes Calculate angles in a straight line Recognise and explain patterns and relationships, generalise and predict.
Assess and review	
Read and write whole numbers to at least 100000 Order a set of positive and negative whole numbers Round decimals to nearest whole number. Order fractions Recall addition and subtraction facts for each number up to 20 Add/subtract any pair of two-digit numbers, including crossing 100	Use doubling to multiply two-digit numbers by 4. Halve any two-digit number Recall facts in x2, x3, x4, x5, x6, x10 tables; derive division facts Recall facts in x7, x8, x9 tables and begin to derive division facts Multiply or divide whole numbers up to 10000 by 10 or 100 Convert m to cm and € to cents, and vice versa; convert kg to g
Measures including problems	Understand area measured in square centimetres. Use formula in words for area of rectangle Use, read and write standard metric units of mass, abbreviations. Know relationships between them. Convert larger to smaller units of mass Suggest suitable units and equipment to estimate or measure mass Read measurements from scales Use all four operations to solve measurement word problems. Choose appropriate operations/calculation methods. Explain working
Handling data	Represent and interpret data in a line graph (e.g. weight of baby at monthly intervals from birth to one year). Recognise when points can be joined to show trends.
Mental calculation strategies (+ -)	Identify near doubles, e.g. 1.5 + 1.6 Add/subtract multiple of 10 or 100 and adjust Use relationship between addition and subtraction
Pencil and paper procedures (+ -)	Extend written methods to addition of more than 2 integers less than 10000, and + and - of pair of decimals both with 1 or 2 decimal places
Money and 'real life' problems	Use all four operations to solve word problems involving money Use all four operations to solve money or 'real life' word problems Choose appropriate operations/calculation methods. Explain working Check by adding in reverse order, including with calculator.
Making decisions, checking results, including using a calculator	
Properties of numbers and number sequences	Recognise multiples of 6, 7, 8, 9 up tot he 10 th multiple Recognise and extend sequences formed by adding 6, 7, 8, 9..., starting from any number Know and apply tests of divisibility by 2, 4,5, 10 or 100
Reasoning about numbers	Make and investigate a general statement about numbers, by finding examples that satisfy it. Suggest extensions.
Assess and review	

Grade 4 Math Curriculum

Summer term

EVERY DAY: Practise and develop oral and mental skills (e.g. counting, mental strategies, rapid recall of +, -, x and ÷ facts)	
Read and write any whole number; round to nearest 10 or 100 Order positive and negative whole numbers; order fractions Round decimals to nearest whole number Know simple fractions as percentages Recall addition and subtraction facts for each number up to 20 Add/subtract any pair of two-digit numbers, including crossing 100	Find pairs with sum of 100, multiples of 50 sum 1000, decimals sum 1, 10 Use doubling and halving to multiply or divide two-digit numbers by 4 Recall facts in x2, x3, x4, x5, x6, x10 tables; derive division facts Recall facts in x7, x8, x9 tables and begin to derive division facts Multiply or divide whole numbers up to 10000 by 10 or 100 Partition to multiply by 2, 5 or 10 and use tests of divisibility

Topic	Objectives: children will be taught to
Place value, ordering, rounding Using a calculator	Use vocabulary of estimation and approximation Make and justify estimates or large numbers and estimate simple proportions Round to the nearest 10, 100, or 1000 Calculate a temperature rise or fall across 0 c Develop calculator skills and use a calculator effectively
Understanding x and ÷ Mental calculation strategies (x ÷) Pencil and paper procedures (x ÷) Money and 'real life' problems Making decisions, checking results, including using a calculator	Express a quotient as a fraction, or as a decimal when dividing a whole number by 2, 4, 5, 10 or when dividing £ and pence Round up or down depending on the context Use relationship between x and ÷ Use known facts and place value to multiply and divide mentally Extend written methods to TU x TU (long multiplication) Use all four operations to solve money or 'real life' word problems, including percentages. Choose appropriate operations/calculation methods. Explain working. Check results
Fractions, decimals and percentages Ratio and proportion	Relate fractions to decimal forms (including tenths, hundredths) and to percentages Find fractions and simple percentages of whole number quantities Solve problems involving rati <u>o</u> n (1 for every) and prop <u>o</u> rtion (1 in every)
Handling data Using a calculator	Solve a problem by representing and interpreting data in bar line charts: axis in 2s, 5s, 10s, 20s, 100s. Discuss cases where intermediate points have no meaning and cases where points where lines may be joined to show trend. Find the mode and calculate the range of a set of data Use a computer to compare different presentations of the same data.
Assess and review	

Read and write any whole number; round to nearest 10 or 100 Order a positive and negative whole numbers; order fractions Order decimals with the same number of decimal laces Know simple fractions as percentages/decimals Find simple percentages Add/subtract any pair of two-digit numbers, including crossing 100	Find pairs with sum of 100, multiples of 50 sum 1000, decimals sum 1, 10 Use doubling and halving to multiply or divide two-digit numbers by 4 Recall multiplication facts to 10 x 10 and derive all division facts Identify pairs of factors of small two-digit numbers Multiply or divide whole numbers up to 10000 by 10 or 100 Partition to multiply by 2, 3, or 10 and use tests of divisibility Convert € to cents, m to cm, km to m, kg to g and litres to millilitres
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Shape and space Reasoning about shapes Measures, including problems	Recognise reflective symmetry in regular polygons Complete symmetrical patterns with two lines of symmetry at right angles Reflect shapes in mirror parallel to one side Recognise where shape will be after translation Make and investigate a general statement about shapes Use timetables. Know and use relationships between units of time Use, read and write standard metric units of capacity, including gallons to pints Suggest suitable units and equipment to estimate or measure capacity Read measurements from scales Use all four operations to solve measurement word problems, including time. Choose appropriate operations/calculation methods. Explain working
Mental calculation strategies (+ -) Pencil and paper procedures (+ -) Money and 'real life' problems Making decisions, checking results, including using a calculator	Add several numbers Use known facts and place value for mental addition and subtraction Extend written methods addition and subtraction of integers less than 10000 and decimals with up to two decimal places Use all four operations to solve money or 'real life' word problems, including percentages Choose appropriate operations/calculation methods. Explain working Check using sums. Differences of odd or even numbers
Properties of numbers and number sequences Reasoning about numbers	Find all the pairs of factors of any number up to 100 Make general statements about odd and even numbers, including sums and differences Explain a generalised relationship in words
Assess and review	