



Legrave Primary School

Year 5 EEE

Subject: Maths

Legrave Primary School

STRIVING FOR EXCELLENCE, LEARNING FOR LIFE

Yr 5	Emerging	Expected	Exceeding	
Number – number and place value	Count in multiples of 4, 6, 7,8, 9, 25 and 1000	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000		
	Count backwards through zero to include negative numbers	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	Use negative numbers in practical contexts and solve problems, including calculating intervals across 0.	
	Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	Use place value in whole numbers to at least 10 000 000 to read, write, compare and order numbers.	
	Find 1000 more or less than a given number	Read roman numerals to 1000 (m).	Read Roman numerals to 1000 (M).	
	Recognise the place value of each digit in a four-digit number	Recognise years written in roman numerals.	Identify the value of each digit in numbers with up to 3 decimal places.	
	Order and compare numbers up to and beyond 1000			
	Round any number to the nearest 10, 100 or 1000	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	Round any whole number to the nearest 10, 100, 1,000, 10,000, 100,000.	
	Identify, represent and estimate numbers using different representations		Use approximation to estimate and check answers to calculations and determine, in the context of a problem, levels of accuracy.	
	Solve number and practical problems that involve all of the above and with increasingly large positive numbers	Solve number problems and practical problems that involve all of the above.	Solve problems and reason about place value and number.	
	Number – addition and subtraction	Add and subtract numbers with 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Add and subtract whole numbers with more than 4 digits, using formal written methods
		Add and subtract numbers mentally with increasingly large numbers	Add and subtract mentally with increasingly large numbers.	
Estimate to check answers to a calculation.		Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Use estimation to check answers to calculations and determine, in the context of a problem, appropriate levels of accuracy.	
Use inverse operations to check answers to a calculation.		Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	Solve addition and subtraction multi-step problems in context.	
Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.			Solve problems involving addition, subtraction, multiplication and division.	
			Use knowledge of the 4 operations to reason and to solve problems, including puzzles not set in a context.	
Number - multiplication and division	Recall multiplication and division facts for multiplication tables up to 12 × 12	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Use understanding of place value to multiply and divide whole numbers and decimals with up to 3 decimal places by 10, 100 and 1000.	
	Use place value, known and derived facts to multiply and divide mentally, including: <ul style="list-style-type: none"> • multiplying by 0 and 1 • dividing by 1 • multiplying together three numbers 	Multiply and divide numbers mentally drawing upon known facts	Recall multiplication and division facts for multiplication tables up to 12 × 12	
	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	Multiply and divide numbers mentally, drawing upon multiplication facts, including with mixed operations and large numbers	Perform mental calculations including with mixed operations and large numbers.
	Recognise and use factor pairs and commutativity in mental calculations	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	Fluently multiply numbers up to 4 digits by a 2-digit number using the long multiplication method.	Recognise and use: <ul style="list-style-type: none"> • multiples and factors; • prime numbers to at least 19; and • square numbers, at least up to 144
		Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Use estimation to check answers to calculations and determine, in the context of a problem, appropriate levels of accuracy.	
		Establish whether a number up to 100 is prime and recall prime numbers up to 19	Fluently divide numbers with up to 4 digits by a 1-digit number using the formal written method.	
		Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	Use long division with 2-digit divisors.	
		Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Interpret remainders according to the context.	
		Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	Solve problems involving addition, subtraction, multiplication and division.	
	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Use knowledge of the 4 operations to reason and to solve problems, including puzzles not set in a context.	
	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates			

Number - fractions	Count up and down in hundredths	Read and write decimal numbers as fractions [for example, $0.71 = 71/100$]	
	Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Multiply one-digit numbers with up to 2 decimal places by whole numbers.
	Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths	Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal	Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'.
		Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $+ = 1$]	Use common factors to: <ul style="list-style-type: none"> simplify fractions; identify equivalent fractions, using common multiples to express fractions in the same denomination.
	Compare numbers with the same number of decimal places up to two decimal places	Compare and order fractions whose denominators are all multiples of the same number	Convert and calculate between improper fractions and mixed numbers where appropriate for the context.
	Round decimals with one decimal place to the nearest whole number	Read, write, order and compare numbers with up to three decimal places	Fluently add and subtract decimal numbers and round when required to specified degrees of accuracy.
	Recognise and write decimal equivalents to $1/4$, $1/2$, $3/4$	Round decimals with two decimal places to the nearest whole number and to one decimal place	
	Recognise and write decimal equivalents of any number of tenths or hundredths	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Recall and use equivalences between simple fractions, decimals and percentages, in different contexts.
	Recognise and show, using diagrams, families of common equivalent fractions	Add and subtract fractions with the same denominator and denominators that are multiples of the same number	Associate a fraction with division and begin to calculate decimal fraction equivalents.
	Add and subtract fractions with the same denominator	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Add and subtract fractions with denominators that are multiples of the same number.
Solve simple measure and money problems involving fractions and decimals to two decimal places.	Solve problems involving number up to three decimal places	Calculate simple fractions and percentages of whole numbers and quantities.	
Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	Solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25.	Use written division methods in cases where the answer has up to 2 decimal places.	
	Solve problems involving converting between units of time	Solve problems and reason about fractions, decimals and percentages.	
Measurement	Solve problems involving money of the same unit, including giving change, and other measures, including time.	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	Solve problems involving converting units of time, including problems involving the duration of events.
	Convert between different units of measure [for example, kilometre to metre; hour to minute]	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	Use, read, write and convert between standard metric units of measure.
		Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
	Measure and calculate the perimeter of a rectilinear shape (including squares) in centimetres and metres	Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	Recognise that shapes with the same areas can have different perimeters and vice versa.
	Find the area of rectilinear shapes by counting squares	Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	Calculate and compare the area of squares and other rectangles including using standard units, square centimetres (cm^2) and square metres (m^2).
	Estimate, compare and calculate different measures, including money in pounds and pence.		Estimate the area of irregular shapes by counting squares (including half squares and fractions of squares).
	Read, write and convert time between analogue and digital 12- and 24-hour clocks		Read, write and convert time between analogue clocks (including clock faces using Roman numerals) and digital 12- and 24-hour clocks, using am and pm where necessary.
	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	Reason and solve problems involving measures.
			Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

R and P				Use simple ratio and proportional reasoning to solve problems.
Algebra				Solve problems involving similar shapes where the scale factor is known or can be found.
Geometry - properties of shapes	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes (including perpendicular and parallel lines, acute, obtuse and right angles)	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations		Use simple formulae in words, and express missing number problems algebraically.
	Identify lines of symmetry in 2-d shapes presented in different orientations	Use the properties of rectangles to deduce related facts and find missing lengths and angles		Generate and describe linear number sequences.
	Complete a simple symmetric figure with respect to a specific line of symmetry.	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.		Find possible values in missing number problems and equations involving 1 or 2 unknowns.
	Identify acute and obtuse angles and compare and order angles up to two right angles by size	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles		Compare and classify geometric shapes based on their properties and sizes.
	Solve problems involving shapes and reason about their properties.	Draw given angles, and measure them in degrees ($^{\circ}$) Identify: <ul style="list-style-type: none"> Angles at a point and one whole turn (total 360°) Angles at a point on a straight line and a turn (total 180°) Other multiples of 90° 		Recognise, describe and build simple 3-D shapes, including using nets and other 2-D representations.
Geometry - p&d	Describe positions on a 2-D grid as coordinates in the first quadrant	Solve problems involving shapes and reason about their properties.		Draw 2-D shapes using given lengths and angles with increasing accuracy.
	Describe movements between positions as translations of a given unit to the left/right and up/down	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.		Illustrate and describe parts of circles including radius, diameter and circumference.
	Plot specified points and draw sides to complete a given polygon.			Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Statistics	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts, pictograms, tables and time graphs.	Complete, read and interpret information in tables, including timetables.		Find unknown angles in triangles.
	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Solve comparison, sum and difference problems using information presented in a line graph		Solve problems and reason about shapes and their properties.
				Describe positions of a 2-D grid as co-ordinates in the first quadrant.
				Draw and translate simple shapes on the co-ordinate plane in the first quadrant.
				Use reasoning to solve problems related to co-ordinates, reflections and translations.
				Present, complete, read and interpret information in tables and bar charts
				Construct and interpret line graphs, interpret pie charts and use both to solve problems.
				Calculate and interpret the mean as an average for simple sets of discrete data in different contexts.