Leagrave Primary School

Year 4 EEE

Subject: Maths

Yr 4	Emerging	Expected	Exceeding	
Number – number and place value	Count from 0 in multiples of 4, 8, 50 and 100	Count in multiples of 6, 7, 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.	
	Read and write numbers up to 1000 in numerals and in words.	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	
			Read roman numerals to 1000 (m) and recognise years written in roman numerals.	
	Find 10 or 100 more or less than a given number	Find 1000 more or less than a given number		
	Recognise the place value of each digit in a three digit number (100s, 10s and 1s)	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)		
	Compare and order numbers to 1000	Order and compare numbers 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	
	Identify, represent and estimate numbers using different representations	Identify, represent and estimate numbers using different representations		
	Solve number and practical problems that involve all of the above.	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.	
Number – addition and subtraction	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	Add and subtract numbers with up to 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 numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds		Add and subtract numbers mentally with increasingly large numbers	
	Estimate the answer to a calculation and use inverse operations to check answers	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 inverse operations to check answers to a calculation.		
	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	
Number - multiplication and division	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	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	
	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	Use place value, known and derived facts to multiply and divide mentally, including: • multiplying by 0 and 1 • dividing by 1 • multiplying together three numbers	Multiply and divide numbers mentally drawing upon known facts	
			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	
			Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	
			Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	
		Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	Establish whether a number up to 100 is prime and recall prime numbers up to 19	
		Recognise and use factor pairs and commutativity in mental calculations	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	
			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	
	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	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 multiplication and division including using their knowledge of factors and multiples, squares and cubes	
			Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	
			Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	

Number - fractions	Count up and down in tenths.	Count up and down in hundredths	Read and write decimal numbers as fractions [for example, 0.71 =71/100]
	Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	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
	Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	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, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators		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]
	Compare and order unit fractions, and fractions with the same denominators	Compare numbers with the same number of decimal places up to two decimal places	Read, write, order and compare numbers with up to three decimal places
			Compare and order fractions whose denominators are all multiples of the same number
		Round decimals with one decimal place to the nearest whole number	Round decimals with two decimal places to the nearest whole number and to one decimal place
	Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and write decimal equivalents to 1/4, 1/2 ,3/4	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
		Recognise and write decimal equivalents of any number of tenths or hundredths	
		Recognise and show, using diagrams, families of common equivalent fractions	
	Add and subtract fractions with the same denominator within one whole [for example, + =]	Add and subtract fractions with the same denominator	Add and subtract fractions with the same denominator and denominators that are multiples of the same number
			Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
		Solve simple measure and money problems involving fractions and decimals to two decimal places.	Solve problems involving number up to three decimal places
		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 ½ , ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.
Measurement	Solve problems involving money of the same unit, including giving change, and other measures, including time.	Solve problems involving money of the same unit, including giving change, and other measures, including time.	Solve problems involving converting between units of 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)
	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	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
	Measure the perimeter of simple 2-D shapes	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
		Find the area of rectilinear shapes by counting squares	Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes
	Add and subtract amounts of money to give change, using both £ and p in practical contexts	Estimate, compare and calculate different measures, including money in pounds and pence.	Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
	Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight	Read, write and convert time between analogue and digital 12- and 24-hour clocks	
	Know the number of seconds in a minute and the number of days in each month, year and leap year		
	Compare durations of events [for example to calculate the time taken by particular events or tasks].		
	Record and compare time in terms of seconds, minutes and hours		
	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks		
	Estimate and read time with increasing accuracy to the nearest minute	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.

Geometry - properties of shapes	Draw 2-D shapes.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
	Make 3-D shapes using modelling materials		Use the properties of rectangles to deduce related facts and find missing lengths and angles
	Recognise 3-D shapes in different orientations and describe them		Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
	Recognise angles as a property of shape or a description of a turn	Identify lines of symmetry in 2-d shapes presented in different orientations	
	Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn.	Complete a simple symmetric figure with respect to a specific line of symmetry.	
	Identify whether angles are greater than or less than a right angle	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
	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines		Draw given angles, and measure them in degrees (o) Identify: • Angles at a point and one whole turn (total 360o) • Angles at a point on a straight line and a turn (total 180) • Other multiples of 90
	Solve problems involving shapes and reason about their properties.	Solve problems involving shapes and reason about their properties.	Solve problems involving shapes and reason about their properties.
Geometry – p&d		Describe positions on a 2-D grid as coordinates in the first quadrant	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.
		Describe movements between positions as translations of a given unit to the left/right and up/down	
		Plot specified points and draw sides to complete a given polygon.	
Statistics	Interpret and present data using bar charts, pictograms and tables	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Complete, read and interpret information in tables, including timetables.
	Solve one-step and two-step questions [for example, 'how many more?' and 'how many fewer?'] using information presented in scaled bar charts and pictograms and tables.	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