

Key: O = Oracy skills. LT = Learning Technologies. PSE = Personal, social and emotional skills. MC = Metacognitive skills

MATHS End Points

Aspect	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
1) PLACE VALUE								
a) Recognising numbers	To recognise some numerals of personal significance.		To recognise and use ordinal numbers.			To recognise and understand negative numbers and large positive numbers. (positive/negative 1 million)		To recognise and recall prime numbers.
	To recognise numerals 1 to 5 To count up to 3 or 4 objects by saying one number name for each item.	To recognise numerals 1–20.	To recognise odd and even numbers.	To recognise and describe number patterns including halving and doubling.				To recognise and recall common factors and common multiples for whole numbers with 2 and 3 digits.
b) Counting	To count objects to 10, and begin to count beyond 10.	To count an irregular arrangement of up to 10 objects.	To count to 100.	To count in 2s, 3s, 5s, 10s from any number.	To count in multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10, 25, 50, 100 and 1000 from any given number.	To count forwards or backwards in steps of 100, 1000 or 10,000 for any given number.	To count forward and backwards with positive and negative whole numbers through zero to 1,000,000.	To read, write and compare numbers to at least 1,000,000 and determine the value of each.
	To count up to 6	To count reliably from 1 to 20.	To count 1 more or less than any number to 100.	To count 10 more or less than any number.			To read and write negative numbers and order and count through zero.	To read Roman numerals to 1000 and years.
c) Reading and writing numbers	To select the correct numeral to represent a group of up to 10 objects.	To select the correct numeral to represent a group of up to 10 objects.	To write in numerals to 100 and words to 20.	To read and write numbers to at least 1000 in numerals.	To read and write numbers to at least 10,000.	To read Roman numerals to 100.		

				To explain the place value in 2 digit numbers and words.					
d) Place value				To use place value and number facts to solve problems with	To explain the place value in 4 digit numbers.	To explain the place value in numbers greater than 4 digits.	To use place value on numbers up to 3 decimal places To round any number up to 1,000,000 to the nearest 1, 10, 100, 1000, 10,000 or		
e) Rounding					To round any number to the nearest 10, 100 or 1000.			To round any number to a required degree. To distinguish between exact answers and decimal approximations.	
f) Estimating				To estimate a number in the range that can be counted reliably, and check by counting.		To estimate the answer to calculations involving the four operations.			
g) Ordering and comparing				To order numbers to 20 and say which number is 1 more or 1 less than a given number.	To sort and order groups of numbers up to 100 in increasing order.	To sort numbers less than 100 in increasing and decreasing order.	To order and compare numbers up to 10,000. To use $< = >$ to compare numbers and make number sentences.	To compare Roman Numerals with the concept of place value and zero.	To identify the highest common factor and lowest common multiple, understanding these as the intersection and union of the prime factors.

2i) NUMBER (ADDITION & SUBTRACTION)

a) Calculation	To find the total number of items in 2 groups by counting all of them.	To use quantities and objects to add and subtract two single-digit numbers and count on or back to find the answer up to 20.	To add and subtract 1 and 2 digit (using concrete materials).	To begin to use informal written methods to calculate and record addition and subtraction.	To add three 1 digit numbers.	To recognise that addition can be done in any order and that subtraction cannot.	To add and subtract 2 digit numbers using expanded horizontal informal and formal written methods.	To use column addition and subtraction (decomposition) for up to 3 digit numbers.	To add and subtract 3 and 4 digit numbers using formal written methods.	To add and subtract numbers mentally including 2-3 digit numbers.	To estimate within a range.	To add and subtract whole numbers with more than 4 digits using formal written methods.	To add and subtract mentally with large numbers.	To add and subtract negative integers.	To add and subtract whole numbers with more than 4 digits using formal written methods.	To use the four operations, including efficient written methods, applied to a range of numbers, both positive and negative.
	To find 1 more or 1 less from a group of up to 5 objects, then 10 objects.															
b) Recall/mental		To recognise when there are 1 - 6 items in a group by the way they are set out without counting.			To know number bonds to 20.	To use rapid recall of number facts to 20.	To mentally calculate 2-1 digits, 2 digits -10 and 2-2 digits.	To mentally add and subtract (2-1 digits, 2-2 digits, 3-1, 2, 3 digits).	To practice the rapid recall of timestables up to 12 x12			To add and subtract mentally with large numbers.	To add and subtract negative integers.			
c) Reading and writing	To record, using marks that can be interpreted or explained.			To read and write statements including +, - and =				To record Maths statements accurately using the correct symbols								To write basic algebraic statements and manipulate the data.

d) Solving word problems

To solve problems including adding or taking away 1. (e.g., story books)

To solve problems including adding 1, 2, or 5, or sharing into equal groups.

To solve word problems involving addition and subtraction.

To solve 'take away' and 'find the difference' problems.

To solve one step and two step word problems.

To solve missing number problems.

To solve word problems including missing numbers.

To solve addition and subtraction two-step problems, deciding which operations and methods to use. To use the inverse operation to check calculations

To solve word problems including missing numbers.

To solve multi-step problems, deciding which operations to use.

See also: Multiplication and division for problems involving all four

To solve multi-step problems, deciding which operations to use.

See also: Multiplication and division for problems involving all four operations.

e) Checking answers

To use the inverse operation to check calculations.

To use rounding to check answers

2ii) NUMBER (MULTIPLICATION & DIVISION)

a) Calculation

To solve problems involving doubling, halving and sharing.

To solve practical problems that involve combining groups of 2, 5, or 10, or sharing into equal groups.

To be able to count in 2s, 5s, 10s up to 20, 50 and 100 from any given starting point.

To recognise that multiplication can be done in any order, division cannot.

To write and solve \times and \div problems within 2, 5 and 10 times tables

To write and solve \times and \div problems within times tables up to $\times 10$

To multiply or divide 2 digit and 3 digit numbers by a single digit, including remainders, using formal written layout.

To multiply 4 digit by 2 digit numbers using long multiplication.

To divide 4 digit by 2 digit numbers using long division, giving remainders as whole numbers, fractions, decimals or by rounding.

To use context to decide whether an answer should be rounded, written as a fraction or

To multiply and divide simple fractions.

b) Recall/mental

To rapidly recall all x tables to 12x12.

To mentally calculate using mixed operations and large numbers.

To mentally multiply and divide, including multiplying by 0 and dividing by 1.

To identify multiples and factors up to 12x12.

To mentally multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

To establish whether a number to 100 is prime and recall prime numbers up to 19.

To rapidly recall 2, 5 and 10 x tables.

To recognise and use factor pairs within 40.

To mentally multiply and divide whole

To recognise and use square numbers and cubed numbers. Write square

To know basic square roots of numbers

c) Reading and writing

To know how to read and write x and \div symbols.

To use x, \div and = signs to write statements.

To write and solve one step word problems with x and \div

To solve word problems using one or more steps involving x and \div

To write and solve x and \div written word problems within 2, 5 and 10 times tables.

To write and solve x and \div problems within times tables up to x10

To write and solve multi-step word problems using the four operations.

d) Solving word problems

To write and solve multi-step word problems using the four

e) Checking answers

To use the inverse operation to check calculations. (F)

2iii) NUMBER (FRACTIONS, DECIMALS & PERCENTAGES)

a) Calculation

					mixed numbers and improper fractions and convert one from another.
				To calculate decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and any number of tenths and hundredths.	To calculate the equivalent of a fraction given the denominator or the numerator.
				To find the effect of dividing 2 digit numbers by 10 and 100, identifying the value of digits as units, tenths and hundredths.	To reduce fractions to their simplest form.
				To solve measure and money problems involving fractions and decimals to 2 decimal places.	To calculate and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and any number of tenths and hundredths.
				To calculate equivalent fractions with a denominator not greater than 12.	To add and subtract two fractions with common denominators within one whole.
To find $\frac{1}{2}$ and $\frac{1}{4}$ of objects and shapes.	To find $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of quantities, objects and shapes.				To add and subtract mixed fractions that exceed 1.
					To add and subtract two fractions with common denominators within one whole.
					To multiply proper fractions and mixed numbers by whole numbers.
					To add and subtract numbers with up to three decimal places.
					To calculate (convert) simple fractions as

b) Recall/mental

	To recognise fractions equivalent to 1 and pairs of fractions that add up to 1.		To recall and use equivalences between fractions, decimals and percentages
	To count up and down in tenths.		To identify the value of each digit in a decimal fraction to three decimal places.
	To round decimals with one decimal place to the nearest whole number.	To recognise decimal 'bonds' to 1	To multiply and divide numbers up to three decimal places by
	To count in halves and quarters to 10.	To read and write the decimal numbers 0.1, 0.25, 0.5, 0.75 as fractions.	

c) Reading and writing

To read and write fractions $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ and $\frac{3}{4}$ of a whole.	To read and write fractions to $\frac{1}{2}$.	To write the fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{10}$, $\frac{1}{3}$, $\frac{3}{4}$ as percentages	To read and write numbers with up to three decimal places.
	To compare and order unit fractions with the same denominator.	To use percentages for comparison and calculate	To compare and order numbers with up to three decimal places.

d) Order and compare

To compare and order numbers to 2 decimal places.	To use percentages of whole numbers. (10%, 25%, 50%)	To compare, order and convert between fractions and decimals.
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e) Using Ratio & Probability

To use the language associated with probability such as certain, equally likely, unlikely, impossible and use this to calculate the likelihood of events.

To use ratio to show the relative sizes of two quantities.

To recognise equivalent ratios and simplify a ratio to its lowest terms.(2:3, 4:6

To calculate the probability of events using correct notation.

3i) GEOMETRY (PROPERTIES OF SHAPE)

a) Recognize and use correct vocabulary associated with properties of shape

To identify a circle, square, triangle and rectangle	To begin to use mathematical names for 'solid' 3D shapes -cube, cuboid and sphere.	To use the terms corners and sides correctly when describing 2D shapes.	To use the terms edges, vertices, sides and faces in 3D shapes.	To describe 2d and 3d shapes with accurate vocabulary including polygon, non-polygon and polyhedron.	To identify 2D shapes on the faces of 3D shapes.	To identify perpendicular, and parallel lines.	To name triangles, including isosceles, equilateral and right angled.	To illustrate and name parts of circles, including radius, diameter and circumference.	To use the term 'diagonal' in describing the properties of shapes.	To use the termPi and calculating area and circumference using formula
	Begin to use some mathematical terms to describe squares, triangles, rectangles and circle – sides and corners.	To recognise, name and describe common 2D introducing oval, pentagon and hexagon and simple 3D shapes – cube, sphere and pyramid.	To understand and explain the term polygon.	To identify horizontal, vertical, and curved lines.	To use the terms 'regular' and 'irregular' when					

To use familiar objects and circles, squares, triangles and rectangles to create and recreate patterns and build models.

To use familiar objects and construction materials to create and recreate patterns and build models.

To recognise and describe shapes in their models.

To use non-standard shapes.

b) To make shapes & patterns

To make 2D and 3D shapes, describing them with vocabulary including regular/irregular polygon, polyhedron.

To construct shapes from given dimensions.

To make 2D and 3D shapes including designing nets of simple shapes such as cubes.

To design and create own nets for an increasing range of simple 3d shapes

To build more complex 3D shapes, including making nets.

To draw circles of a given radius or diameter.

To accurately draw polygons using a protractor, equilateral triangle, square, rectangle, pentagon.

To accurately draw polygons using a protractor, equilateral triangle, square, rectangle, pentagon, hexagon, heptagon, octagon, nonagon.

To draw a rectangle, triangle and square using a ruler.

To draw a rectangle, triangle and square on squared paper.

To draw shapes accurately using a ruler measured to the nearest cm.

To accurately draw an equilateral triangle using a

c) Draw shapes

d) Angles

To measure angles in degrees and draw a given angle, writing its size in degrees.

To find unknown angles in any triangles, quadrilaterals and regular polygons.

To identify 90° , 180° and 360° turns.

To find unknown angles involving angles at a point, on a straight line, in a triangle, in a quadrilateral and vertically opposite angles.

To identify acute and obtuse angles and compare the size of different angles.

To estimate the size of angles.

To draw a given angle to nearest 5 degrees.

To draw a given angle to nearest 2 degrees.

To identify lines of symmetry in 2D shapes presented in different orientations.

To complete shapes with respect to a specific line of symmetry.

e) Symmetry

To create symmetrical pictures.

To make and describe simple symmetrical patterns.

complete a simple symmetric figure with respect to a specific line of

To compare and classify geometric shapes based on their properties and sizes.

	To use common sense language to describe differences between shapes (solid/flat, big/small).	To use mathematical language to describe and compare solid (3D) and flat (2D) shapes.	To describe the differences between shapes using language such as straight /curved /round.	To recognise that there are different types of triangles.	To compare and classify geometric shapes based on their properties and sizes.	To identify 3D shapes from 2D representations.	To compare and classify geometric shapes(including triangles) based on their properties and sizes.	To sort and classify properties of 3D shapes and identify parallel planes and symmetries.
f) Compare and classify								

3ii) GEOMETRY (POSITION DIRECTION & MOVEMENT)

		To use right angles to describe rotation for quarter, half and three quarter clockwise and anti-clockwise turns.	To identify right angles, recognise that 2 right angles make a half turn and 4 make a whole turn.	To recognise angles as a property of shape and as an amount of rotation.	To identify angles that are greater or less than a right angle.	To recognise angles as a property of shape and as an amount of rotation.	To plot specified points and draw sides to complete a given polygon in the first and second quadrant.	
a) Angles								
				To use coordinates to describe positions of shapes in the first quadrant	To use coordinates to describe positions of shapes in the first quadrant	To use coordinates to describe positions of shapes in the first quadrant	To describe positions and plot shapes on all four quadrants of the coordinate grid.	To calculate co-ordinates in all four quadrants when points are unknown
b) Coordinates								

c) Movement of shape

To describe positions and plot shapes on all four quadrants of the coordinate grid.

To describe positions and movements between positions on a 2D grid using coordinates in the first and second quadrant.

To identify, describe and represent the position of a shape following a reflection or a translation.
To construct, translate and reflect simple

To perform multi-step movements - translation and enlargement/reduction by a scale factor

4) MEASURES

a) Measure and compare

To order 2 or 3 items by length or height.

To order 2 items by weight or capacity.

To estimate measure, weigh, compare and order objects.

To measure and compare weight and capacity using non-standard methods

To choose and use standard units to estimate and measure length/height, mass, temperature, volume/capacity using appropriate equipment.

To read scales involving all

To measure, compare, add and subtract lengths (m/cm/mm); mass(g/kg); volume/capacity (l/mm) and time (h/min/sec).

To calculate using four operations using units of measure.

To measure volume in practical contexts.

To measure force in Newtons.

b) Time

To sequence familiar events.

To measure short periods of time in simple ways.

To talk about properties of time.

To measure and compare weight and capacity using non-standard methods

To estimate and read time to 5 minutes.

use full names and abbreviations for metric measures.

Use the term quarter past and quarter to.

To tell and write the time from an analogue clock, including using Roman numerals, and 12 and 24 hour digital clocks.

To estimate and read time to the minute.

To add and subtract time.

To know the number of seconds in a minute and the number of days in a month, year and leap year.

To convert time between analogue

To read timetables accurately including analogue, digital and 24 hr clock times

e) Perimeter and Area

		To find the area of squares, rectangles and related composite shapes	To calculate the area of parallelograms and triangles.	
		To calculate the area of squares, rectangles and composite shapes, using correct units.	To recognise when to use the formulae for volume and area.	To calculate the area and perimeter of circles
	To measure and calculate the perimeter of a rectangle where measurements are given in cm and m.	To recognise that shapes with the same areas can have different	To calculate and compare the volume of cuboids.	To calculate surface area

5) STATISTICS (DATA HANDLING)

a) Data retrieval and interpretation

	To use right angles to describe rotation for quarter, half and three quarter clockwise and anti-clockwise turns.			
	To identify right angles, recognise that 2 right angles make a half turn and 4 make a whole turn.	To solve problems including two-step questions using information presented in scaled bar charts and pictograms and tables.	To interpret data presented in bar graphs, line graphs tables and simple pie charts.	To interpret lines of best fit for scatter graphs and correlation

b) Constructing graphs and tables
c) Analysing data from graphs and

To draw simple bar graphs.

To use software programs to create graphs

To interpret data from simple bar charts, tallies and tables.

To complete tally charts, tables and bar graphs from given information
 To interpret simple bar graphs and tables.

To answer simple questions such as most popular/most common.

To use and interpret averages, including mean, median and mode.

To complete tables and bar graphs from given information

To construct line graphs using given or collected data.

To construct graphical representations

To use graphs to answer questions and interpret data.

To solve problems including questions on averages,

To identify which graph would be most suitable to present given or collected data and present data in this form with clear understanding of purpose and audience

To use pie charts

To calculate unknown means by working backwards

d) Averages

6) ALGEBRA

a) Sequences and problems

To solve addition and subtraction problems involving missing numbers.

To solve missing number problems using the four number operations.

To solve missing number problems, including those involving decimals and fractions.

To enumerate all possibilities of combinations of two variables

To generate and describe number sequences including those involving negative and decimal numbers, and proper fractions.

To use basic formulae to calculate the nth term in a sequence
 To simplify expressions involving sums of products and powers.

b) Calculate and generate formulae

To calculate simple formulae expressed as letters with two

To generate simple formulae expressed as letters with two unknowns.

To find the nth term in an arithmetic sequence.

c) Use algebraic notation

To understand and use conventional notation for the priority of operations, including brackets, powers,

To use integer powers and associated roots (square, cube and higher).

KEY VOCABULARY