

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

Aspect	Nursery	Reception	Year 1
a) Recognising numbers	To recognise some numerals of personal significance.	To recognise numerals 1–20.	To recognise and use ordinal numbers. To recognise odd and even numbers.
b) Counting	To count objects to 10, and begin to count beyond 10. To count up to 6 objects from a larger group.	To count an irregular arrangement of up to 10 objects. To count reliably from 1 to 20.	To count to 100. To count 1 more or less than any number to 100.
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.
d) Place value			
e) Rounding			
f) Estimating		To estimate a number in the range that can be counted reliably, and check by counting.	

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.

2i) NUMBER

a) Calculation

To find the total number of items in 2 groups by counting all of them.

To find 1 more or 1 less from a group of up to 5 objects, then 10 objects.

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 add and subtract 2 digit numbers.

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.

c) Reading and writing

To record, using marks that can be interpreted or explained.

To read and write statements including +, - and =

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 use the inverse operation to check calculations.

e) Checking answers

2ii) NUMBER (

To solve problems involving, doubling, halving and sharing.

To solve practical problems that involve combining groups of 2, 2s, 5s, 10s up to 20, 5, or 10, or sharing into 50 and 100 from any equal groups. To be able to count in given starting point.

a) Calculation

b) Recall/mental

c) Reading and writing

d) Solving word problems

e) Checking answers

2iii) NUMBER (FRAC)

a) Calculation

To find $\frac{1}{2}$ and $\frac{1}{4}$ of objects and shapes.

b) Recall/mental

c) Reading and writing

d) Order and compare

e) Using Ratio & Probability

			To use the terms corners and sides correctly when describing 2D shapes.
		To begin to use mathematical names for 'solid' 3D shapes - cube, cuboid and sphere.	To recognise, name and describe common 2D introducing oval, pentagon and hexagon and simple 3D shapes – cube, sphere and pyramid.
a) Recognize and use correct vocabulary associated with properties of shape	To identify a circle, square, triangle and rectangle	Begin to use some mathematical terms to describe squares, triangles, rectangles and circle – sides and corners.	To be familiar with the term polygon.

	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.
b) To make shapes & patterns	To use non-standard shapes.	To recognise and describe shapes in their models.

c) Draw shapes	To draw a rectangle, triangle and square using a ruler.
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d) Angles

e) Symmetry

To create symmetrical pictures.

To use mathematical language to describe and compare solid (3D) and flat (2D) shapes.

To use common sense language to describe differences between shapes (solid/flat, big/small).

To describe differences between shapes (bigger/smaller/biggest).

To describe the differences between shapes using language such as straight /curved /round.

f) Compare and classify

a) Angles

b) Coordinates

c) Movement of shape



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

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

c) Money

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

d) Use/compare order and convert units

To use non standard units to count/compare amounts. (handspan, step, handful)

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

To tell the time to o'clock and half past.

e) Perimeter and Area

5) STATISTICS

a) Data retrieval and interpretation

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

d) Averages



**a) Sequences and
problems**

**b) Calculate and
generate formulae**

**c) Use algebraic
notation**



K

skills. MC = Metacognitive skills

MATHS

Year 2

Year 3

Year 4

Year 5

1) PLACE VALUE

To recognise and describe number patterns including halving and doubling.		To recognise and understand negative numbers and large positive numbers. (positive/negative 1 million)	
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 count 10 more or less than any number.		To read and write negative numbers and order and count through zero.	To read, write and compare numbers to at least 1,000,000 and determine the value of each.
To read and write numbers to at least 1000 in numerals. To explain the place value in 2 digit numbers and words.	To read and write numbers to at least 10,000.	To read Roman numerals to 100.	To read Roman numerals to 1000 and years.
To use place value and number facts to solve problems with answers to 100.	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 100,000.
	To round any number to the nearest 10, 100 or 1000.		
To estimate the answer to calculations involving the four operations.			

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 sort numbers less than 100 in increasing and decreasing order.

(ADDITION & SUBTRACTION)

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 rapid recall of number facts to 20.

To mentally calculate 2-1 digits, 2 digits -10 and 2-2 digits.

To solve one step and two step word problems.

To solve missing number problems.

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 mentally add and subtract (2-1 digits, 2-2 digits, 3-1, 2, 3 digits). To record Maths statements accurately using the correct symbols

To solve word problems including missing numbers. To solve addition and subtraction two-step problems, deciding which operations and methods to use.

To practice the rapid recall of timestables up to 12 x12

To solve word problems including missing numbers.

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 add and subtract mentally with large numbers.

To add and subtract negative integers. To add and subtract decimals to 3 decimal places.

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

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

To use the inverse operation to check calculations

To use rounding to check answers

MULTIPLICATION & DIVISION

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

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

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 carry out operations in the correct order. To multiply and divide simple fractions.

To rapidly recall all \times tables to 12×12 .

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 12×12 .

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 \times tables.

To recognise and use factor pairs within 40.

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

To recognise and use square numbers and cubed numbers.

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

Write square numbers and cubed numbers with correct notation.

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

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

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

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

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

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

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

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

IONS, DECIMALS & PERCENTAGES)

numbers and improper fractions and convert one from another.

To add and subtract mixed fractions that exceed 1.

To add and subtract two fractions with common denominators within one whole.

To calculate decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and any number of tenths and hundredths.

To multiply proper fractions and mixed numbers by whole numbers.

To find the effect of dividing 2 digit numbers by 10 and 100, identifying the value of digits as units, tenths and hundredths.

To calculate the equivalent of a fraction given the denominator or the numerator.

To add and subtract numbers with up to three decimal places.

To solve measure and money problems involving fractions and decimals to 2 decimal places.

To reduce fractions to their simplest form.

To calculate (convert) simple fractions as percentages. ($\frac{1}{8}$, $\frac{1}{6}$)

To calculate and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and any number of tenths and hundredths.

To multiply and divide numbers up to two decimal places by 1 digit and 2 digit whole numbers.

To find $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of quantities, objects and shapes.

To calculate equivalent fractions with a denominator not greater than 12.

To add and subtract two fractions with common denominators within one whole.

To use percentages for comparison and

	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 count in halves and quarters to 10.	To round decimals with one decimal place to the nearest whole number.	To recognise decimal 'bonds' to 1 To read and write the decimal numbers 0.1, 0.25, 0.5, 0.75 as fractions.	To multiply and divide numbers up to three decimal places by 10, 100 and 1000.
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 compare and order unit fractions with the same denominator.	To write the fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{10}$, $\frac{1}{3}$, $\frac{3}{4}$ as percentages To use percentages for comparison and calculate percentages of whole numbers. (10%, 25%, 50%)	To read and write numbers with up to three decimal places. To compare and order numbers with up to three decimal places. To compare and order fractions with different denominators.
	To compare and order numbers to 2 decimal places.		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)

RY (PROPERTIES OF SHAPE)

		To identify perpendicular, and parallel lines.	
To use the terms edges, vertices, sides and faces in 3D shapes.		To name triangles, including isosceles, equilateral and right angled.	
To identify 2D shapes on the faces of 3D shapes.	To describe 2d and 3d shapes with accurate vocabulary including polygon, non-polygon and polyhedron.	To recognise and name parallelograms, rhombus and trapezium.	To illustrate and name parts of circles, including radius, diameter and circumference.
To understand and explain the term polygon.	To identify horizontal, vertical, and curved lines.	To use the terms 'regular' and 'irregular' when describing 2 d and 3d shapes. To make 2D and 3D shapes, describing them with vocabulary including regular/irregular polygon, polyhedron.	To use the term 'diagonal' in describing the properties of shapes.
	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 including different prisms. To draw circles of a given radius or diameter.	To construct shapes from given dimensions. To build more complex 3D shapes, including making nets.
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 protractor.	To accurately draw polygons using a protractor, equilateral triangle, square, rectangle, pentagon.

				To find unknown angles in any triangles, quadrilaterals and regular polygons.
		To measure angles in degrees and draw a given angle, writing its size in degrees.		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 90°, 180° and 360° turns.		
		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.			
To make and describe simple symmetrical patterns.	complete a simple symmetric figure with respect to a specific line of symmetry.	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.
To recognise that there are different types of triangles.	To compare and classify geometric shapes based on their properties and sizes.			

POSITION DIRECTION & MOVEMENT

To use right angles to describe rotation for quarter, half and three quarter clockwise and anti-clockwise turns.	To recognise angles as a property of shape and as an amount of rotation.	
To identify right angles, recognise that 2 right angles make a half turn and 4 make a whole turn.	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 quadrant.	To plot specified points and draw sides to complete a given polygon in the first and second quadrant.	
To use coordinates to describe positions of shapes in the first quadrant	To use coordinates to describe positions of shapes in the first and second quadrant	To describe positions and plot shapes on all four quadrants of the coordinate grid. To identify, describe and represent the position of a shape following a reflection or a translation.
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 construct, translate and reflect simple shapes on the coordinate plane.

4) MEASURES

To choose and use standard units to estimate and measure length/height, mass, temperature, volume/capacity using appropriate equipment.	To measure, compare, add and subtract lengths (m/cm/mm); mass(g/kg); volume/capacity (l/mm)	To calculate using four operations using units of measure.	
To read scales involving all measures.	and time (h/min/sec).	To measure volume in practical contexts.	To measure force in Newtons.

To recognise and 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 estimate and read time to 5 minutes.

To convert time between analogue and digital 12 and 24 hour clocks.

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

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 use £ and p to make amounts, add and subtract (£-£, p-p).

To find different combinations of coins that equal the same amounts of money.

To convert time between analogue and digital 12 and 24 hour clocks.

To solve addition and subtraction of money problems.

	To convert between different units of measure (e.g. kg-g).	To use, read, write and convert between standard units.	
To compare and order measurements using the signs < = >.	To convert time between analogue and digital 12 and 24 hour clocks.	To use decimal notation to three decimal places to solve measurement and conversion problems.	
To tell the time to 1/4 past and 1/4 to.	To tell the time to 5 minute intervals.	To find the area of squares, rectangles and related composite shapes	
		To calculate the area of squares, rectangles and composite shapes, using correct units.	To calculate the area of parallelograms and triangles.
	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 perimeter and vice versa	To recognise when to use the formulae for volume and area.
			To calculate and compare the volume of cuboids.

STICS (DATA HANDLING)

To use right angles to describe rotation for quarter, half and three quarter clockwise and anti-clockwise turns.	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 identify right angles, recognise that 2 right angles make a half turn and 4 make a whole turn.		To complete tables and bar graphs from given information	
To draw simple bar graphs.		To construct line graphs using given or collected data.	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 software programs to create graphs	To complete tally charts, tables and bar graphs from given information	To construct graphical representations which show data change over time.	
To interpret data from simple bar charts, tallies and tables.	To interpret simple bar graphs and tables.	To use graphs to answer questions and interpret data.	To use pie charts

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

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

To solve problems including questions on averages, including mean, median and mode.

To calculate unknown means by working backwards

6) ALGEBRA

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

To enumerate all possibilities of combinations of two variables

To calculate simple formulae expressed as letters with two unknowns.

To generate simple formulae expressed as letters with two unknowns.

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

EY VOCABULARY


Year 6

To recognise and recall prime numbers.

To recognise and recall common factors and common multiples for whole numbers with 2 and 3 digits.

To round any number to a required degree.
To distinguish between exact answers and decimal approximations.

To identify the highest common factor and lowest common multiple, understanding these as the intersection and union of the prime factors.



To use the four operations, including efficient written methods, applied to a range of numbers, both positive and negative.

To write basic algebraic statements and manipulate the data.

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

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




To know basic square
roots of numbers



To compare, order and convert between fractions and decimals.
To use the language associated with probability such as certain, equally likely, unlikely, impossible and use this to calculate the likelihood of events.

To calculate the probability of events using correct notation.




To use the term π and calculating area and circumference using formula

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



To calculate co-ordinates in all four quadrants when points are unknown

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




To use, read, write and convert between standard units.


To use decimal notation to three decimal places to solve measurement and conversion problems.

To calculate the area and perimeter of circles

To calculate surface area



To interpret lines of best fit for scatter graphs and correlation



To use basic formulae
to calculate the n th
term in a sequence

To simplify expressions
involving sums of
products and powers.

To find the n th term in
an arithmetic
sequence.

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

To interpret algebraic
notation.

