YEAR 1 NUMERACY

NUMBER & PLACE VALUE

Count to and across 100, forwards and backwards, beginning from any given number.

Count, read & write numbers to 100 in numerals.

Count in multiples of 2s, 5s and 10s.

Identify 1 more/less for any given number to 100.

Identify and represent numbers using objects and pictorial representations including the number line.

Use the language: equal to, more than, less than (fewer), most, least.

Read and write numbers from 1 to 20 in numerals and words.

ADDITION & SUBTRACTION

Read, write and interpret mathematical statements involving + / − / = signs.

Represent and use number bonds and related subtraction facts within 20.

Add and subtract one-digit and two-digit numbers to 20, including 0.

Solve one-step problems that using concrete objects and pictorial representations.

Solve missing number problems such as 7 = ? – 9 for addition and subtraction.

TIME

Compare, describe and solve practical problems for time (for example: quicker, slower, earlier, later).

Measure and begin to record time in hours, minutes, and seconds.

Sequence events in chronological order using key language (before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening).

Recognise and use language relating to dates, including days of the week, weeks, months and years.

Tell the time to the hour and half past the hour.

Draw hands on a clock face to show these times.

LENGTH, MASS & CAPACITY

Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half].

Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than].

Compare, describe and solve practical problems for capacity and volume [for example, full/empty, more than, less than, half, half full, quarter].

Measure and begin to record lengths and heights.

Measure and begin to record mass/weight.

Measure and begin to record capacity/volume.

MULTIPLICATION & DIVISION

With the support of the teacher:

Solve one-step problems by calculating the answer using concrete objects.

Solve one-step problems by calculating the answer using pictorial representations.

Solve one-step problems by calculating the answer using arrays.

FRACTIONS

Recognise, find and name a half as 1 of 2 equal parts of an object or shape.

Recognise, find and name a half as 1 of 2 equal parts of a quantity.

Recognise, find and name a quarter as 1 of 4 equal parts of an object or shape.

Recognise, find and name a quarter as 1 of 4 equal parts of a quantity.

GEOMETRY & SHAPE

Recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles].

Recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].

POSITION

Understand and use positional language (right, left, forwards, backwards).

Show whole, half, quarter and three-quarter turns.

MONEY

I can recognise and use pounds and pence.

YEAR 2 NUMERACY

NUMBER & PLACE VALUE

Count in steps of 2, 3, and 5 from 0.
Count in steps of 10s from any number forward and backward.
Recognise the place value of each digit in a two-digit number (10s, 1s).
Identify and represent numbers using different representations, including the number line.
Compare and order numbers from 0 up to 100.
Use <, > and = signs.
Read and write numbers to at least 100 in numerals and in words.
Use place value and number facts to solve problems.

ADDITION & SUBTRACTION

Recall number bonds to 20 fluently.
Derive and use number facts for numbers up to 100.
Use column methods to add and subtract 2-digit numbers with growing accuracy.
Add and subtract a two-digit number and 1s (using concrete objects, pictorial representations and mentally).
Add and subtract a two-digit number and 10s (using concrete objects, pictorial representations and mentally).
Add and subtract 2 two-digit numbers (using concrete objects, pictorial representations and mentally).
Add 3 one-digit numbers.
Recognise the inverse relationship between addition and subtraction and use to check answers.
Show that addition can be done in any order but subtraction cannot.

MULTIPLICATION & DIVISION

Show that multiplication can be done in any order but division cannot.
Know multiplication and division facts for 2, 5 and 10 times tables to 12.
Recognise odd and even numbers.
Use Y2 multiplication and division facts to represent and solve problems using ×, ÷ and = signs.
I can solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

FRACTIONS

Name, write and find half, quarter, three-quarters and one-third of a length or shape.
Name, write and find half, quarter, three-quarters and one-third of a set of objects or quantity.
Write simple fractions.
e.g. ½ of 6 = 3
Count in halves or quarters to 10.
Show that ½ is the same as 2/4.

TIME

Tell and write the time: quarter past and quarter to.
Tell and write the time to five minute intervals.
Draw hands on a clock face to show these.
Compare and sequence intervals of time.
Give the number of minutes in an hour and hours in a day.

MONEY

Find different combinations of coins that equal the same.
Recognise and use the signs £ and p.
Solve simple problems (in a practical context) involving addition and subtraction of money of the same unit, including giving change.

USING & APPLYING

Solve problems with addition and subtraction using concrete objects and pictorial representations (including those involving numbers, quantities and measures).
Apply increasing knowledge of mental and written methods.

LENGTH, MASS & CAPACITY

Choose and use appropriate standard units to estimate and measure (*to the nearest appropriate unit) using rulers, scales, thermometers and measuring vessels:*

- length/ height in any direction (m/cm).
- mass (kg/g).
- temperature (°C).
- capacity (litres/ml).

Compare and order lengths, mass, volume/capacity and record the results using >, < and =.

GEOMETRY & SHAPE

Describe properties of 2d shapes.
Draw 2d shapes.
Recognise and describe right angles.
Recognise and describe vertical lines of symmetry.
Describe 3d shapes. (edges, vertices, faces).
Identify 2d shapes on the surface of 3d shapes.
Compare and sort common 2d and 3d shapes and everyday objects.

POSITION

Use mathematical language to describe position, direction and movement, (including movement in a straight line and rotation as turn).
Show that a right angle is a quarter rotation, two right-angles make a half rotation and three right-angles make a three-quarter rotation.
Use and describe clockwise and anti-clockwise when describing rotation of direction.

STATISTICS

Draw and use tables.
Draw and use tally charts.
Draw a simple pictogram accurately.
Interpret pictograms with many to 1 ratios including 2, 5 and 10.
Draw a simple block diagram accurately.
Interpret block diagrams.
Compare data and answer questions when data is presented in a Table, Tally Chart, Pictogram or Bar Chart.

YEAR 3 NUMERACY

NUMBER & PLACE VALUE

Count from 0 in multiples of 4, 8, 50 and 100.
Find 10 or 100 more or less than a given number.
Explain the place value of each digit in a 3-digit number (100s, 10s, 1s).
Compare and order numbers up to 1,000.
Identify, represent and estimate numbers using different representations, including measure.
Read and write numbers up to 1,000 in numerals and in words.

ADDITION & SUBTRACTION

Add and subtract a three-digit number and 1s mentally.
Add and subtract a three-digit number and 10s mentally.
Add and subtract a three-digit number and 100s mentally.
Use column methods to add or subtract numbers with up to 3 digits.
Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
Solve missing number problems, using number facts, place value, and more complex addition and subtraction.
Estimate answers and judge the 'reasonableness' of an answer.

MULTIPLICATION & DIVISION

Recall, derive and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Apply the fact that multiplication can be done in any order.
Apply knowledge of Y3 facts to 2-digit times 1-digit sums using written methods including short multiplication and short division.
Apply knowledge of Y3 facts to 2-digit times 1-digit sums mentally.

FRACTIONS

Count up and down in tenths.
Explain that a tenth means splitting an object /quantity into ten equal parts.
Explain the link between tenths and place value.
Recognise, find and write fractions of a discrete set of objects, including simple non-unit fractions.
Recognise and draw equivalence for fractions with small denominators.
Recognise and use fractions as numbers, including non-unit fractions.
Add and subtract fractions with the same denominator, within one whole.
Compare and order unit fractions.
Compare and order fractions with the same denominator.

USING & APPLYING

Solve number problems and practical problems involving Year 3 ideas.
Solve scaling problems e.g. three times as big/many.
Solve correspondence problems, (in which n objects are linked to m objects) e.g. three hats and four coats – how many outfits?
Solve problems related to Y3 fractions.

TIME

Tell the time from an analogue clock, including with Roman Numerals.
Use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight.
Record and compare time in terms of seconds, minutes and hours.
Recall the number of seconds in a minute and the number of days in each month, year and leap year.
Compare durations of events.

LENGTH, MASS & CAPACITY

Draw and measure straight lines in cm and mm, rounding to the nearest cm.
Measure and compare lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).
Add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).
Compare and use mixed units e.g. 1kg and 200g.
Find equivalence in measures e.g. 5m=500cm.

GEOMETRY & SHAPE

Explain how 2 right-angles make a half turn, 3 make a three-quarter turn and 4 make a complete turn.
Use 'angles' as a property of shape or description of turn.
Recognise if angles are greater or less than a right angle.
Measure the perimeter of simple 2-D shapes.
Describe properties of 2d shapes, including length of lines, right angle/acute/obtuse.
Recognise 3d shapes in different orientations and describe properties.
Identify horizontal/vertical lines. Identify pairs of parallel lines. Identify perpendicular lines.

STATISTICS

Interpret and present data using Bar charts / Pictograms / Tables.
Use simple scales (e.g. 2,5,10 units per cm) in pictograms and bar charts with some accuracy.
Solve questions such as 'How many more/fewer' when given a scaled graph for questions that involve one or two steps.

MONEY

Add and subtract amounts of money to give change, recording £ and p separately.

YEAR 4 NUMERACY

NUMBER & PLACE VALUE

Count in multiples of 6, 7, 9, 25 and 1,000.
Find 1,000 more or less than a given number.
Count backwards through 0 to include negative numbers.
Explain the place value of each digit in a four-digit number.
Order and compare numbers beyond 1,000.
Round any number to the nearest 10, 100 or 1,000.
Read Roman numerals to 100 (I to C).
Know that over time, the numeral system changed to include the concept of 0 and place value.

ADDITION & SUBTRACTION

Add and subtract numbers mentally when appropriate, with increasing fluency.
Add and subtract numbers with up to 4 digits using the formal written methods of column addition and subtraction where appropriate.
Estimate and use inverse operations to check answers to a calculation.
Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

MULTIPLICATION/DIVISION

Recall multiplication and division facts for multiplication tables up to 12 × 12.
Use place value and multiplication facts to multiply and divide mentally e.g. 2x800=1600, 900÷3=300.
Use the distributive law (39x7=30x7+9x7) and Associative law (2x8x5= 2x5x8).
Multiply up to three numbers applying above laws.
Use written layout and calculation when multiplying 2 or 3 digit numbers by a 1 digit number.

FRACTIONS

Recognise and show, using diagrams, families of common equivalent fractions.
Count up and down in hundredths.
Explain that hundredths arise when dividing an object by 100 and dividing tenths by 10.
Solve problems involving increasingly harder fractions to calculate quantities including non-unit fractions where the answer is a whole number.
Add and subtract fractions with the same denominator with answers going past a whole.
Recognise and write decimal equivalents of any number of tenths or hundreds.
Recognise and write decimal equivalents to ¼, ½ and ¾I can find the effect of dividing a one- or two-digit number by 10 and 100.
Identify the value of the digits in decimals to ones, tenths and hundredths.
Round decimals with 1 decimal place to the nearest whole number.
Compare numbers with the same number of decimal places up to 2 decimal places.
Solve simple measure and money problems involving fractions and decimals to 2 decimal places.

USING & APPLYING

Solve number and practical problems with increasingly large positive numbers.
Solve problems that include: Multiplying and adding (two-step); multiplying a 2-digit number by a 1-digit number; Integer scaling; Harder correspondence problems e.g. 10 cakes shared between 3 children.
Solve simple measure and money problems involving fractions and decimals to 2 decimal places.
Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.

GEOMETRY & SHAPE

Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
Find the area of rectilinear shapes by counting squares.
Compare and classify shapes, including types of quadrilaterals and triangles, based on their properties and sizes.
Identify acute and obtuse angles.
Compare and order angles up to 2 right angles by size.
Identify lines of symmetry in 2-D shapes presented in different orientations.
Complete a simple symmetric figure with respect to a specific line of symmetry, including where the line of symmetry does not dissect the shape.

LENGTH, MASS & CAPACITY

Convert between different units of measure e.g. metres and cm, ml and litres etc.

Estimate, calculate and compare different measurements, converting between units.

TIME

Convert between different units of measure e.g. hours to minutes.
Read, write and convert time between analogue and digital 12- and 24-hour clocks.
Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.

POSITION

Describe positions on a 2-D grid as coordinates in the first quadrant.
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 discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

MONEY

Calculate and compare amounts of money.

Use decimal notation for money.

YEAR 5 NUMERACY

NUMBER & PLACE VALUE

Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.
Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0.
Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.
Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.
Recognise and describe linear number sequences, including those involving fractions and decimals.
Give the term-to-term rule for a number sequence.

ADDITION & SUBTRACTION

Add and subtract whole numbers with more than 4 digits, including using formal written methods (column).
Add and subtract numbers mentally with increasingly large numbers e.g. 12,426-1,200=11,226.
Use rounding to check answers to calculations.
Solve multi-step addition and subtraction problems, choosing which operations to use and why.

MULTIPLICATION & DIVISION

Identify factors, including all factor pairs of a number and common factors of two numbers.
Explain and find prime numbers, prime factors and composite numbers (non-prime).
Recall prime numbers up to 19.
Establish whether a number up to 100 is prime.
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 known facts.
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division.
Interpret remainders appropriately for the context.
Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.
Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).

FRACTIONS

Compare and order fractions whose denominators are all multiples of the same number.
Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
Recognise mixed numbers and improper fractions.
Convert from one form to the other and write mathematical statements > 1 as a mixed number e.g. 2/5 + 4/5=6/5 = 1 1/5.
Add and subtract fractions with denominators that are multiples of the same number.
Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
Read and write decimal numbers as fractions e.g. 71/100=0.71.
Recognise and use thousandths and relate to prior knowledge.
Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place.
Read, write, order and compare numbers with up to 3 decimal places.
Find decimal fraction (to 2 decimal places) compliments to 1.
Solve problems involving number up to 3 decimal places.
Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100'.
Write percentages as a fraction with denominator 100, and as a decimal fraction.
Solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5, 2/5 , 4/5 and fractions with a denominator of a multiple of 10 or 25.

USING & APPLYING

Solve number problems and practical problems that involve Y5 number and place value.
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.
Use all four operations to solve problems involving measure and money using decimal notation, including scaling.

LENGTH, MASS & CAPACITY

Explain and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
Estimate volume e.g. using 1 cm^3 blocks to build cuboids (including cubes)] and capacity e.g. using water.
Draw lines with a ruler to the nearest millimetre.

GEOMETRY & SHAPE

Measure and calculate the perimeter of composite rectilinear shapes in cm and metres.
Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm^2) and square metres (m^2).
Estimate the area of irregular shapes.
Use the properties of rectangles to deduce related facts and find missing lengths and angles.
Identify 3-D shapes, including cubes and other cuboids, from 2-D representation.
Explain that angles are measured in degrees.
Estimate and compare acute, obtuse and reflex angles.
Draw given angles and measure them in degrees.
Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Measure angles with a protractor.
Use symbols for parallel and right angles.

MONEY

I can use all four operations to solve problems involving money using decimal notation, including scaling.

POSITION

Identify, describe and represent the position of a shape following a reflection (parallel to axis) or translation, using the appropriate language.
Know that the shape has not changed.

STATISTICS

Solve comparison, sum and difference problems using information presented in a line graph.
Complete, read and interpret information in tables, including timetables.

TIME

Solve problems involving converting between units of time (e.g. seconds to minutes, minutes to hours, hours to days, days to weeks and days).

YEAR 6 NUMERACY

NUMBER & PLACE VALUE

Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
Round any whole number to a required degree of accuracy.
Use negative numbers in context.
Calculate intervals across 0.
Identify common factors, common multiples and prime numbers.
Identify the value of each digit in numbers given to 3 decimal places.
Multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.
Solve problems which require answers to be rounded to specified degrees of accuracy.

MULTIPLICATION & DIVISION

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division.
Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.
Perform mental calculations, including with mixed operations and large numbers.
Talk about the order of operations using brackets. Multiply one-digit numbers with up to 2 decimal places by whole numbers.
Use written division methods in cases where the answer has up to 2 dp.

FRACTIONS

Use common factors to simplify fractions.
Use common multiples to express fractions in the same denomination.
Compare and order fractions (incl fractions >1).
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
Multiply simple pairs of proper fractions, writing the answer in its simplest form [e.g ¼ × ½ = 1/8].
Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6].
Associate a fraction with division and calculate decimal fraction equivalents [e.g. 0.375] for a simple fraction [e.g. 3/8].
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

USING & APPLYING

Solve number and practical problems that involve all of the above.
Use knowledge of the order of operations to carry out calculations involving the 4 operations.
Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Solve problems involving addition, subtraction, multiplication and division.
Use estimation to check answers to calculations and determine an appropriate degree of accuracy.

RATIO & PROPORTION

Solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts.
Solve problems involving the calculation of percentages and the use of percentages for comparison.
Solve problems involving similar shapes where the scale factor is known or can be found.

ALGEBRA

Use simple formulae.
Generate and describe linear number sequences.
Express missing number problems algebraically.
Find pairs of numbers that satisfy an equation with 2 unknowns.
Enumerate possibilities of combinations of 2 variables.
Understand equivalent expressions $(a + b = b + a)$.
Generalise number patterns.
Solve number puzzles.

LENGTH, MASS & CAPACITY

Use, read, and write standard units, using decimal notation to up to 3 decimal places.
Convert measurements of length, mass, volume and time from a smaller unit to a larger unit, and vice versa.
Convert between miles and kilometres.
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3). Extend this e.g. mm^3 and km^3.
Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

GEOMETRY & SHAPE

Recognise that shapes with the same areas can have different perimeters and vice versa.
Recognise when it is possible to use formulae for area and volume of shapes.
Calculate the area of parallelograms and triangles.
Draw 2-D shapes using given dimensions and angles.
Recognise, describe and build simple 3-D shapes, including making nets.
Compare and classify geometric shapes based on their properties and sizes.
Find unknown angles in any triangles, quadrilaterals, and regular polygons.
Illustrate and name parts of circles, including radius, diameter and circumference.
Know that the diameter is twice the radius.
Recognise angles where they meet at a point, are on a straight line, or are vertically opposite.

POSITION

Describe positions on the full coordinate grid (all 4 quadrants).
Draw and translate simple shapes on the coordinate plane.
Reflect simple shapes in the axes.

STATISTICS

Interpret and construct pie charts and line graphs.
Use these to solve problems.
Relate pie charts to angles.
Relate conversion between km and miles to its graphical representation.
Calculate and interpret the mean as an average.

ADDITION & SUBTRACTION

Perform mental calculations, including with mixed operations and large numbers.