Temple Learning Academy – Primary Maths Progression Document

Place Value							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	Verbally count beyond 20, recognising the pattern of the counting system. Subitise (recognise quantities without counting) up to 5.	Count to and across 100, forwards and backwards from any given number. Count in multiples of 2,5 and 10.	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backwards.	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.	
Counting- negative numbers					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 context and calculate intervals across zero.
Reading and writing numerals and word		Read and write numbers from 1 to 20 in numerals and words. Count, read and write numbers to 100 in numerals.	Count, read and write numbers to at least 100 in numerals and in words.	Count, 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 Roman numerals to 1000 (M) and recognise years written in Roman numerals.	

Composition	Have a deep understanding of number to 10, including the composition of each number.		Recognise the place value of each digit in a two-digit number (tens, ones).	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	Recognise the place value of each digit in numbers to at least 1,000,000 and determine the value of each digit.	Recognise the place value of each digit in numbers up to 10,000,000 and determine the value of each digit.
Identifying and representing numbers	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	Identify and represent numbers using objects and pictorial representations including the number line.	Identify, represent, and estimate numbers using different representations, including the number line.	Identify, represent, and estimate numbers using different representations.	Identify, represent, and estimate numbers using different representations.		
More than, less than	Recognise when one quantity is greater than, less than or the same as the other quantity.	Given a number, identify one more and one less.	Given a number, identify one more and one less within 100.	Find 10 or 100 more or less than a given number.	Find 1000 more or less than a given number.		
Ordering and comparing numbers	Compare quantities up to 10 in different contexts.	Use the language of: equal to, more than, less than (fewer), most, least.	Compare and order numbers from 0 up to 100; use <, > and = signs.	Compare and order numbers up to 1000.	Compare and order numbers up to 1000 and beyond.	Compare and order numbers to at least 1,000,000.	Compare and order numbers up to 10,000,000
Rounding					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 a required degree of accuracy.

Problem Solving			Use place value and number facts to solve problems.	Solve number problems and practical problems involving these ideas.	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 number and practical problems that involve all of the above.

Addition and Subtraction

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtraction	Combining two amounts. Adding on more to a given amount. Subtracting by taking objects away.	Read, write, and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.				
Mental methods		Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • add and subtract one-digit and two-digit numbers to 20, including zero.	Add and subtract numbers using concrete objects, pictorial representations and mentally, including: • a two-digit number and ones. • a two-digit number and tens. • two two-digit numbers • adding three one-digit numbers.	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, 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.	Add and subtract numbers mentally with increasingly large numbers.

Written methods				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 whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
Number bonds	Automatically number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	Represent and use number bonds and related subtraction facts within 20.	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.				
Estimation and inverse methods to check accuracy			Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Estimate the answer to a calculation and use inverse operations to check answers.	Estimate and use inverse operations 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, an appropriate degree of accuracy.
Problem solving		Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving	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.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

		7 = ▢ – 9.	numbers, quantities, and measures.				Solve problems involving addition, subtraction, multiplication, and division.

Multiplication and Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall		Count in multiples of 2, 5 and 10.	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	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. 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 Know and use the vocabulary of prime numbers, prime factors, and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Recognise and use square numbers and cube numbers, and the notation for squared and cubed.	Identify common factors, common multiples, and prime numbers. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Calculations			Calculate mathematical	Write and calculate	Multiply two-digit and three-digit	Multiply numbers up to 4 digits by a	Multiply multi-digit numbers up

			statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	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.	numbers by a one-digit number using formal written layout. 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	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 and interpret remainders appropriately for the context. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	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, and 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. Use their knowledge of the order of operations to carry out calculations involving the four operations.
Problem solving		Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations, and arrays with the support of the teacher.	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	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 objects.	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares, and cubes. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	Solve problems involving addition, subtraction, multiplication, and division.

Fractions

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise and write		Recognise, find, and name a half as one of two equal parts of an object, shape, or quantity. Recognise, find, and name a quarter as one of four equal parts of an object, shape, or quantity.	Recognise, find, name and write fractions $\frac{1}{2}$ $\frac{1}{4}$ $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.	Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. Recognise, find, and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	Count up and down in hundredths. Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Identify, name, and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. 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, $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$	

Comparing fractions			Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	Recognise and show, using diagrams, equivalent fractions with small denominators. Compare and order unit fractions, and fractions with the same denominators.	Recognise and show, using diagrams, families of common equivalent fractions.	Compare and order fractions whose denominators are all multiples of the same number.	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1
Fractions Calculations			Write simple fractions. For example, $\frac{1}{2}$ of 6 = 3.	Add and subtract fractions with the same denominator within one whole. For example, $\frac{1}{7} + \frac{5}{7} = \frac{6}{7}$	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.	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. For example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ Divide proper fractions by whole numbers. For example, $\frac{1}{3} \div 2 = \frac{1}{6}$

Solving problems				Solve problems that involve all the above.	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 fractions with a denominator of a multiple of 10 or 25.	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Decimals

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise, write, compare and calculate					Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ Round decimals with one decimal place to the nearest whole number. Compare numbers with the same number of decimal places up to two decimal places. 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.	Read and write decimal numbers as fractions. For example, 0.71 = $\frac{71}{10}$ Recognise and use thousandths and relate them to tenths, hundredths, and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order, and compare numbers with up to three decimal places.	Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. Multiply one-digit numbers with up to two decimal places by whole numbers. Use written division methods in cases where the answer has up to two decimal places.

Fractions, Decimals, Percentages and Ratio

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions, decimals percentages					Solve simple measure and money problems involving fractions and decimals to two decimal places.	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. Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{2}{5}$ $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	Associate a fraction with division and calculate decimal fraction equivalents. For example, 0.375 for a simple fraction $\frac{3}{8}$ Recall and use equivalences between simple fractions, decimals, and percentages, including in different contexts.
Problem solving						Solve problems involving number up to three decimal places.	Solve problems which require answers to be rounded to specified degrees of accuracy. Solve problems involving the relative sizes of two quantities

							where missing values can be found by using integer multiplication and division facts. Solve problems involving the calculation of percentages. For example, of measures, and such as 15% of 360] and the use of percentages for comparison. Solve problems involving similar shapes where the scale factor is known or can be found.

Measurement

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Length and height	Compare taller and shorter than.	Compare, describe, and solve practical problems for lengths and heights. For example, long/short, longer/shorter, tall/short, Double/half. Measure and begin to record lengths and heights.	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); to the nearest appropriate unit, using rulers. Compare and order lengths using >, < and =.	Measure, compare, add, and subtract lengths (m/cm/mm).	Measure, compare, add, and subtract lengths (m/cm/mm). Convert between different units of measure. For example, kilometre to metre.	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre. Understand and use approximate equivalences between metric units and common imperial units such as inches and centimetres.	Use, read, write, and convert between standard units, converting measurements of length from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Convert between miles and kilometres.
Mass		Compare, describe, and solve practical problems for mass/weight. For example, heavy/light, heavier than, lighter than. Measure and begin to record the following: mass/weight.	Choose and use appropriate standard units to estimate and measure mass (kg/g); to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order mass and	Measure, compare, add, and subtract mass (kg/g).	Convert between different units of measure.	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram). Understand and use approximate equivalences between metric units and common	

			record the results using >, < and =.			imperial units such as inches, pounds, and pints.	
Volume		Compare, describe, and solve practical problems for capacity and volume. For example, full/empty, more than, less than, half, half full, quarter.				Convert between different units of metric measure. For example, litre and millilitre. Understand and use approximate equivalences between metric units and common imperial units such as pints. Estimate volume. For example, using 1 cm^3 blocks to build cuboids and cubes. Estimate capacity. For example, using water.	Use, read, write, and convert between standard units, converting measurements of volume from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Calculate, estimate, and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units. For example, mm^3 and km^3. Recognise when it is possible to use formulae for area and volume of shapes.

Money		Recognise and know the value of different denominations of coins and notes.	Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	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.		
Perimeter and area				Measure the perimeter of simple 2-D shapes.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using	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.

						standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shape.	Calculate the area of parallelograms and triangles.
Time		Sequence events in chronological order using language [for example, 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 Time. For example, quicker, slower, earlier, later. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Measure and begin to record the following: time (hours, minutes, seconds)	Compare and sequence intervals of time. Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. Know the number of minutes in an hour and the number of hours in a day.	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. Record and compare time in terms of seconds, minutes, and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, and midnight Know the number of seconds in a minute and the number of days in each month, year and leap year	Convert between different units of measure. For example, hour to minute. Read, write, and convert time between analogue and digital 12- and 24-hour clocks.		Use, read, write, and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

				Compare durations of events. For example, to calculate the time taken by particular events or tasks.			
Problem solving					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. Solve problems involving converting between units of time.	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

Geometry

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
2-D shapes	Recognise common 2D shapes, including: circles, triangles and shapes with 4 sides. To develop their spatial reasoning skills across all areas of mathematics including shape.	Recognise and name common 2-D shapes, including: rectangles, squares, circles and triangles.	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify 2-D shapes on the surface of 3-D shapes. For example, a circle on a cylinder and a triangle on a pyramid. Compare and sort common 2-D shapes and everyday objects.	Draw 2-D shapes.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Draw 2-D shapes using given dimensions and angles Compare and classify geometric shapes based on their properties and sizes. Illustrate and name parts of circles, including radius, diameter, and circumference and know that the diameter is twice the radius.
3-D Shapes		Recognise and name common 3D shapes, including: cuboids, cubes, pyramids and spheres.	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Compare and sort common 2-D shapes and everyday objects.	Recognise 3-D shapes in different orientations and describe them. Make 3-D shapes using modelling materials.		Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	Recognise, describe, and build simple 3-D shapes, including making nets.

Angles and lines				Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Recognise angles as a property of shape or a description of a turn. Identify right angles. Recognise that two right angles make a half-turn three make three quarters of a turn and four a complete turn. 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. 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.	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles and measure them in degrees· Identify: • angles at a point and one whole turn (total 360°) • angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) • other multiples of 90°	Find unknown angles in any triangles, quadrilaterals, and regular polygons. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Position and direction		Describe position, direction, and movement, including whole, half, quarter, and three-quarter turns.	Order and arrange combinations of mathematical objects in patterns and sequences. Use mathematical vocabulary to		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	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 positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane

			describe position, direction, and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half, and three-quarter turns (clockwise and anticlockwise).		and up/down. Plot specified points and draw sides to complete a given polygon.		and reflect them in the axis.

Statistics

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Present and interpret data			Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	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.	Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.
Problem solving			Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.	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.	

Algebra

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Note – although formal algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the 'missing number' objectives from Y1/2/3		Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	Solve problems, including missing number problems.			Use simple formulae. Generate and describe linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables.