

Tracking Individual Pupil Progress (TIPPS): Primary Mathematics Assessment Profile

Year 2 Understanding and investigating within number

Stage B: typical range of Year 2 attainment			
	2.1 Beginning to develop Y2 expectations	2.2 Embedding understanding of Y2 expectations	2.3 Demonstrates mastery and application of Y2 expectations
Place value, ordering and rounding			
• Counting, reading and writing numbers	Counts, reads and writes numbers from 1-100 in numerals and up to at least 20 in words.	Counts, reads and writes numbers to at least 100 in numerals and in words.	Counts, reads and writes all numbers to at least 100 in numerals and words with mostly accurate spelling.
• Comparing and ordering numbers	Continues to confidently identify and represent numbers to 20 and beyond using objects and structured apparatus and a number line. Compares and orders numbers up to 100; Starts to use <, > and = signs	Identifies and represents a greater range of numbers up to 100 using different representations including the number line. Compares and orders numbers from 0 – 100; uses <, > and = signs	Identifies, represents and estimates numbers to 100 and beyond, using different representations, including the number line Compares and orders numbers from 0 – 100 and beyond; Uses <, > and = signs confidently.
• Place value	Develops understanding of place value in 2 digit numbers with support of structured materials. Uses place value and number facts to solve simple problems	Recognises the place value of each digit in a two- digit number (tens, ones). Partitions numbers e.g. 23 as 20 + 3. Describes as two tens and 3 ones Uses place value and number facts to solve a wider range of problems.	Fluently recognises the place value of each digit in a two- digit number (tens, ones) Starts to recognise zero as a place holder. Partitions numbers in different ways e.g. 23 as 20 + 3 or as 10 + 13 to support subtraction. Demonstrates reasoning about place value and number facts to solve more complex problems.
Properties of numbers and number sequences			
• Counting in multiples	Continues to count fluently in multiples of 2s, 5s and 10s from different multiples.	Counts in multiples of 2s, 5s and 10s and starts to count in multiples of 3 to at least 30.	Fluently counts forwards and back in multiples of 2, 5 and 10 from different multiples beyond 100 Confidently counts in multiples of 3 to at least 30.
• Recognising and describing patterns	Start to recognise patterns in the number system including odd and even numbers.	Develops understanding of a wider range of pattern in the number system including odd and even numbers.	Explores and discusses patterns in the number system
Fractions			
	Confidently recognises, finds and names one half / one quarter as two / four equal parts of a wide range of objects shapes, measures or quantities. Demonstrates understanding with practical materials, pictures and explanations.	Recognizes, finds, names and writes fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape and set of objects or a quantity. Recognizes the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ Writes simple fractions e.g. $\frac{1}{2}$ of 6 = 3	Fluently recognizes, finds, names and writes fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape and set of objects or a quantity and recognizes the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ in a range of contexts Writes simple fractions e.g. $\frac{1}{4}$ of 12 = 3
	Continues to connect unit fractions to equal sharing and grouping.	Continues to connect unit fractions to equal sharing and grouping in a wider range of contexts	Continues to connect and explain unit fractions as equal sharing and grouping in many contexts.
	Starts to understand fractions as numbers and to count in steps of halves and quarters.	Counts in steps of halves and quarters beyond one. Starts to use $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on number lines.	Counts in fractions up to 10 from any number and uses the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line
	Begin to solve simple problems involving fractions of numbers, shapes, money or measures using practical materials to support.	Expresses simple problems involving numbers, shapes, money or measures using fraction notation and solves them, explaining methods.	Solves more complex fraction problems giving explanations of reasoning and methods.

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Year 2 Developing and applying calculation

Stage B: typical range of Year 2 attainment			
	2.1 Beginning to develop Y2 expectations	2.2 Embedding understanding of Y2 expectations	2.3 Demonstrates mastery and application of Y2 expectations
Addition and subtraction Understanding number operations and the links between them	Recognize and use the inverse relationship between addition and subtraction and use this to solve missing number problems with single digit numbers	Recognize and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Recognize and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems with more complex number sentence.
	Starts to show that addition of two numbers can be done in any order (commutative)	Shows that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	Shows and uses that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
		Starts to check calculations e.g. adding back to check subtractions /adding numbers in different order to check addition e.g. $5 + 2 + 1 = 1 + 2 + 5$.	Checks calculations e.g. adding back to check subtractions and adding numbers in different order check to addition e.g. $5 + 2 + 1 = 1 + 2 + 5$.
Addition and subtraction Recall of number facts	Recalls and use addition and subtraction facts for all numbers to 10 and relates to bonds for 20.	Recalls and uses addition and subtraction facts to 20	Recalls and uses addition and subtraction facts to 20 fluently.
		Derives and uses related facts to 100 and beyond e.g. uses $3 + 7 = 10$ to calculate $30 + 70 = 100$ or $100 - 30 = 70$	Fluently derives and uses related facts to 100 and beyond e.g. uses $3 + 7 = 10$ to calculate $30 + 70 = 100$ or $100 - 30 = 70$
Addition and subtraction Mental calculation	Add and subtract numbers using concrete objects, pictorial representations, and mentally including; 2 single digit numbers - A number up to 20 and 1s	Add and subtract numbers using concrete objects, pictorial representations, and mentally including; 2 digit numbers and 1s 2 digit number and 10s 2 digit numbers which do not involve bridging a 10 - Adding 3 single digit numbers	Adds and subtracts 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 including bridging through a 10 - Three single digit numbers
	Solves and simple 1 or 2 step problems using concrete objects and pictorial representations, including those involving number, quantities and measures.	Solves and poses simple 2 step problems and reasoning puzzles - Use concrete objects and pictorial representations, including those involving number, quantities and measures. - Apply increasing knowledge of mental and written methods. Uses the language of sum and difference	Solve and poses more complex problems such as 3 step problems and reasoning puzzles with addition and subtraction. - Use concrete objects and pictorial representations, including those involving number, quantities and measures. - Apply increasing knowledge of mental and written methods.
Multiplication and division Understanding number operations and the links between them	Starts to understand that multiplication of two numbers can be done in any order (commutative).	Shows that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	Shows and applies understanding that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

• Recall of number facts	Recall multiplication facts for the 10 multiplication table and use them to derive division facts and count in steps of 10 answer questions.	Recalls and uses multiplications and division facts for the 2, 5 and 10 multiplication tables Recognises odd and even numbers. Starts to connect the tables Connects the ten multiplication table to place value and the five multiplication table to divisions on a clock face.	Rapidly recalls and uses multiplications and division facts for the 2, 5 and 10 multiplication tables. Makes connections between the tables. Connects the 10 multiplication table to place value and multiplication and division by 10 and use known multiplication and division facts to derive others e.g. $2 \times 20 = 40$
• Mental calculation			
	Starts to calculate mathematical statements for multiplication and division within the multiplication tables and writes them using the multiplication (x) and division (÷) and equals (=) signs	Calculates mathematical statements for multiplication and division within the multiplication tables and writes them using the multiplication (x) and division (÷) and equals (=) signs	Calculates a wider range of mathematical statements for multiplication and division within the multiplication tables and writes them fluently using the multiplication (x) and division (÷) and equals (=) signs.
	Continues to become more confident in solving one step problems involving multiplication and division, by calculating the answer using objects, arrays and pictorial representations with support. Developing an understanding of grouping and sharing as it relates to multiplication and division	Solve simple problems involving multiplication and division using: • materials, arrays, • repeated addition, • recall of multiplication and division facts Problems should be in a range of contexts including measures Demonstrates understanding of grouping and sharing and how they relate to multiplication and division / doubling and halving / fractions	Solve more complex problems involving multiplication and division using materials, arrays, repeated addition, mental methods and (increasingly, recall of) multiplication and division facts including problems in contexts including measures. Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes.

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Year 2 Measurement

Stage B: typical range of Year 2 attainment			
	2.1 Beginning to develop Y2 expectations	2.2 Embedding understanding of Y2 expectations	2.3 Demonstrates mastery and application of Y2 expectations
Measurement			
- length - mass - temperature - capacity	Measures and records using e.g. rulers, metre sticks - lengths and heights (m/cm) - mass (kg/g) - temperature (°C) - capacity (litres/ml) to nearest appropriate unit using standard units and uses these to describe, compare and solve practical problems e.g. Who is taller? Which is heavier?	Chooses and uses appropriate standard units and equipment to estimate, measure and record with increasing accuracy to the nearest appropriate standard unit - lengths and heights in any direction (m/cm) - mass (kg/g) - temperature (°C) - capacity (litres/ml) Uses these to describe, compare and solve a wider range of more complex practical problems e.g. How much longer is this ribbon than this one?	Choose and use appropriate standard units and equipment to estimate, measure and record accurately to the nearest appropriate standard unit using standard abbreviations - lengths and heights in any direction (m/cm) - mass (kg/g) - temperature (°C) - capacity (litres/ml) Uses these to describe, compare and solve more complex practical problems e.g. How much longer is this ribbon than this one? Uses knowledge of the number system to support accurate measuring and uses simple multiples to compare measures e.g. 'half as high', twice as high'
	Compare and order lengths, mass, volume/capacity using appropriate comparative language such as long / longer / heavier.	Compare and order lengths, mass, volume/capacity and record results using >, < and = and appropriate comparative language	Compare and order lengths, mass, volume/capacity and record results using >, < and = and a wide range of accurate comparative language
Time	Continues to be fluent with language relating to dates; days of week, months, years. Reads the time to the hour and half hour confidently, using vocabulary of o'clock and half past. Starts to use quarter past /to. Draws the hands on a clock face to show these times.	Compares and sequence intervals of time Tells and writes 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.	Fluent with telling and recording the time to five minutes on an analogue clock. Know the number of minutes in an hour and the number of hours in a day and use these facts to solve problems
Money	Recognises the value of different denominations of coins and notes. Begin to recognise and use symbols for pounds (£) and pence (p) Makes connections between values of coins e.g. five 1p coins being of the same value as one 5p coin or two 5p coins being of equal value to one 10p coin.	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	Find all possible combinations of coins to equal a given amount or how to pay a given amount using the fewest possible number of coins Solve more complex problems involving money.

Year 2 Geometry

Stage B: typical range of Year 2 attainment			
	2.1 Beginning to develop Y2 expectations	2.2 Embedding understanding of Y2 expectations	2.3 Demonstrates mastery and application of Y2 expectations
Geometry			
Properties of shapes	Recognises, names and describes the properties of common 2-D shapes in different orientations including pentagons and hexagons.	Developing the use of precise mathematical vocabulary to identify and describe the properties of a wide variety of 2D shapes (displayed in a range of orientations). Identifies lines of symmetry in a vertical line in 2-D shapes	Identifies and describes using precise mathematical vocabulary the properties of a wide variety of 2D shapes (displayed in a range of orientations) including the number of sides, line symmetry in a vertical line and right angles. Draw shapes using a straight edge.
	Recognise, name and describe some properties of common 3-D shapes including pyramids, cones and spheres.	Developing the use of precise mathematical vocabulary to identify and describe the properties of a variety of 3D shapes including the number of edges, vertices and faces.	Identify and describe , fluently using precise mathematical vocabulary, the properties of 3D shapes (including cuboids, sphere, pyramids, prisms and cones) including the number of edges, vertices and faces.
		Identifies 2-D shapes on the surface of some 3-D shapes (for example the circle on a cylinder and a triangle on a pyramid.)	
	Compares and sorts common 2D and 3D shapes using given criteria.	Compares and sort common 2-D and 3-D shapes and everyday objects , on the basis of their geometric properties including vertices, sides, edges and faces. Suggests criteria for sorting.	Compare and sort common 2D and 3D shapes and everyday objects explaining the reasons for their categories using precise mathematical vocabulary. Use more than 1 criterion to sort and identify and describe properties.
Position and direction	Recognises and creates a range of pattern structures with shapes e.g. circle, circle, square, circle, circle, square and uses mathematical language to describe the pattern and to identify if there is an error or omission in the pattern.	Orders and arranges combinations of mathematical objects in patterns and sequences. Uses a wider range of mathematical language to describe the pattern Start to solve problems related to patterns and sequences.	Order and arrange combinations of mathematical objects (including shapes in different orientations) in more complex patterns and sequences . Explains the pattern or sequence and uses understanding of them to solve problems.
	Continue to use of mathematical language to describe positions, directions and movement , including whole, half, quarter and three-quarter turns. Connect turning clockwise with movements of hands on a clock face. Solve simple problems involving position and direction with support	Use mathematical language to describe position, direction and movement, including movement in a straight line and turning movements. Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) Start to apply understanding to independently solving problems related to position and direction.	Use precise mathematical vocabulary to describe position, direction and movement, including movement in a straight line and turning. Distinguish between rotation as a turn and in terms of right angles for quarter, half and three quarter turns (clockwise and anti-clockwise). Confidently apply understanding of position and direction to solve more complex problems and to pose problems of their own.

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Year 2 Statistics

Stage B: typical range of Year 2 attainment			
Statistics	2.1 Beginning to develop Y2 expectations	2.2 Embedding understanding of Y2 expectations	2.3 Demonstrates mastery and application of Y2 expectations
	Interprets and constructs simple pictograms where the picture is worth one unit. Interpret and construct simple tally charts and block diagrams.	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. including pictograms with many to one correspondence with simple ratios 2, 5 and 10)	Interpret and construct a wider range of pictograms, tally charts, block diagrams and tables with more complex scales and pictogram ratios as appropriate.
	Ask and answer questions that require counting the number of objects in each category.	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity e.g. using Venn and Carroll diagrams. Ask and answer questions about totalling and comparing categorical data.	Ask and answer more complex questions related to a wider range of charts involving totalling and comparing categorical data.