

Townhill Infant School - Progression of skills in Mathematics

Number and Place Value			
Nursery	Reception	Year 1	Year 2
<p>Counting Take part in counting rhymes</p> <p>Develop counting type behaviour</p> <p>Count in every day context sometimes skipping numbers</p> <p>Recite numbers past five</p> <p>Say 1 item for each number in order</p>	<p>Counting Count objects, actions and sounds</p> <p>Link numerals to values</p> <p>Count beyond 10</p> <p>Verbally count beyond 20 in the right order</p>	<p>Counting count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> <p>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</p> <p>given a number, identify one more and one less</p>	<p>Counting count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward</p>
<p>Comparing Numbers Compare amounts saying more, lots and same</p> <p>Compare quantities using language more than and fewer than</p>	<p>Comparing Numbers Compare numbers</p> <p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p>	<p>Comparing Numbers use the language of: equal to, more than, less than (fewer), most, least</p>	<p>Comparing Numbers compare and order numbers from 0 up to 100; use <, > and = signs</p>

Number and Place Value			
Nursery	Reception	Year 1	Year 2
<p>Identifying, Representing and Estimating Numbers Reacting to changes in amount of up to 3 items</p> <p>Subitize to three</p> <p>Show finger numbers to five Link numerals to amount up to five</p>	<p>Identifying, Representing and Estimating Numbers Subitize to 5</p>	<p>Identifying, Representing and Estimating Numbers identify and represent numbers using objects and pictorial representations including the number line</p> <p>Read and Write Numbers from 1 to 20 in numerals and words.</p>	<p>Identifying, Representing and Estimating Numbers identify, represent and estimate numbers using different representations, including the number line</p> <p>Read and Write Numbers to at least 100 in numerals and in words</p>
<p>Understanding Place Value</p>	<p>Understanding Place Value Understand one more/less relationship between consecutive numbers</p>	<p>Understanding Place Value</p>	<p>Understanding Place Value recognise the place value of each digit in a two-d digit number (tens, ones) Use place value and number facts to solve problems</p>

Addition and Subtraction			
Nursery	Reception	Year 1	Year 2
Number Bonds	<p>Number Bonds Explore composition of numbers to 5</p> <p>Explore composition of numbers to 10</p> <p>Automatically recall number bonds to 5 and some to 10</p> <p>Have a deep understanding of number to 10, including the composition of each number</p>	<p>Number Bonds represent and use number bonds and related subtraction facts within 20</p>	<p>Number Bonds recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p>
Mental Calculation	Mental Calculation	<p>Mental Calculation add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)</p>	<p>Mental Calculation add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers <p>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>

Addition and Subtraction			
Nursery	Reception	Year 1	Year 2
Written Methods	Written Methods	Written Methods read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)	Written Methods
Inverse, Estimating and Checking Answers	Inverse, Estimating and Checking Answers	Inverse, Estimating and Checking Answers	Inverse, Estimating and Checking Answers recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
Problem Solving Solve real world mathematical problems with numbers to 5	Problem Solving	Problem Solving solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	Problem Solving solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods <i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)</i>

Multiplication and Division			
Nursery	Reception	Year 1	Year 2
Multiplication and Division Facts	Multiplication and Division Facts Explore and represent patterns within numbers including evens and odd and double facts	Multiplication and Division Facts <i>count in multiples of twos, fives and tens</i>	Multiplication and Division Facts <i>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward</i> recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
Mental Calculation	Mental Calculation Explore how quantities can be divided equally	Mental Calculation	Mental Calculation show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
Written Calculation	Written Calculation	Written Calculation	Written Calculation calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs
Problem Solving	Problem Solving	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	Problem Solving solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

	Fractions		
Nursery	Reception	Year 1	Year 2
Counting in Fractional Steps	Counting in Fractional Steps	Counting in Fractional Steps	Counting in Fractional Steps <i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)</i>
Recognising Fractions	Recognising Fractions	Recognising Fractions 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	Recognising Fractions recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
Equivalent Fractions	Equivalent Fractions	Equivalent Fractions	Equivalent Fractions write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

Measurement			
Nursery	Reception	Year 1	Year 2
<p>Comparing and Estimating Compare sizes and weights using vocabulary big, little, smaller, high, low t all heavy</p> <p>Make comparison between objects relating to size and capacity e.g. big, small, large, tiny, little, full, empty</p> <p>Make comparisons between objects relating to length and weight e.g. longer/shorter, lighter/heavier</p> <p>Begin to describe a sequence of events using language first and then</p>	<p>Comparing and Estimating compare length, weight and capacity using vocabulary short, long, shorter, longer, shortest, longest, heavy, heavier, heaviest, light, lighter, lightest, full, half full, empty, nearly full, nearly empty</p>	<p>Comparing and Estimating compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] <p>time [e.g. quicker, slower, earlier, later]</p> <p>sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p>	<p>Comparing and Estimating compare and order lengths, mass, volume/capacity and record the results using >, < and =</p> <p>compare and sequence intervals of time</p>

Measurement			
Nursery	Reception	Year 1	Year 2
Measuring and Calculating	Measuring and Calculating	<p>Measuring and Calculating measure and begin to record the following:</p> <ul style="list-style-type: none"> * lengths and heights * mass/weight * capacity and volume <p>time (hours, minutes, seconds)</p> <p>recognise and know the value of different denominations of coins and notes</p>	<p>Measuring and Calculating choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p> <p>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>find different combinations of coins that equal the same amounts of money</p> <p>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p>
Telling the Time	Telling the Time	<p>Telling the Time tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>recognise and use language relating to dates, including days of the week, weeks, months and years</p>	<p>Telling the 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.</p> <p>know the number of minutes in an hour and the number of hours in a day.</p>

Measurement			
Nursery	Reception	Year 1	Year 2
Converting	Converting	Converting	Converting know the number of minutes in an hour and the number of hours in a day.
Geometry: Properties of Shape			
Nursery	Reception	Year 1	Year 2
Identifying Shapes and their Properties Complete inset puzzles Talk about 2D and 3D shapes using informal language such as pointy, curvy, sharp etc Select shapes appropriately for a purpose and combine shapes to make new ones Talk about 2D and 2D shapes using mathematical language such as circle, rectangle, triangle square, sides, corners, straight, flat, round	Identifying Shapes and their Properties Select, rotate and manipulate shapes to develop spatial reasoning skills Compose and decompose shapes so children recognise shapes can have other shapes within it	Identifying Shapes and their Properties recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	Identifying Shapes and their Properties identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
Comparing and Classifying	Comparing and Classifying	Comparing and Classifying	Comparing and Classifying compare and sort common 2-D and 3-D shapes and everyday objects

Geometry: Position and Direction

Nursery	Reception	Year 1	Year 2
<p>Position, Direction and Movement Understand position through words e.g. in, on, under, up, down, besides, between</p> <p>Describe a familiar route using words like in front of and behind</p>	<p>Position, Direction and Movement</p>	<p>Position, Direction and Movement describe position, direction and movement, including half, quarter and three-quarter turns.</p>	<p>Position, Direction and Movement use mathematical vocabulary to 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 anti-clockwise)</p>
<p>Pattern Notice patterns and arrange things in patterns</p> <p>Talk about and identify patterns around them using informal language e.g. stripy, pointy, spotty, blobs etc</p> <p>Extend and create ABAB patterns and notice and create an error</p>	<p>Pattern Continue, copy and create repeating patterns</p>	<p>Pattern</p>	<p>Pattern order and arrange combinations of mathematical objects in patterns and sequences</p>

Statistics			
Nursery	Reception	Year 1	Year 2
Interpreting, Constructing and Presenting Data	Interpreting, Constructing and Presenting Data	Interpreting, Constructing and Presenting Data	<p>Interpreting, Constructing and Presenting Data interpret and construct simple pictograms, tally charts, block diagrams and simple tables</p> <p>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <p>ask and answer questions about totalling and comparing categorical data</p>
Algebra			
Nursery	Reception	Year 1	Year 2
Equations	Equations	<p>Equations <i>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as</i> $7 = \square - 9$</p> <p><i>represent and use number bonds and related subtraction facts within 20</i></p>	<p>Equations <i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.</i></p> <p><i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</i></p>
Sequences	Sequences	<p>Sequences <i>sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening</i></p>	<p>Sequences <i>compare and sequence intervals of time</i></p> <p><i>order and arrange combinations of mathematical objects in patterns</i></p>

