



Healey Primary School

Maths

Scheme of work

	Early Learning Goals
Number	<ul style="list-style-type: none">• Count reliably to 20• Place numbers to 20 in order• Say which number is one more or less than a given number• Add and subtract two single digit numbers, counting on or back• Solve problems using doubling, halving and sharing
Shape and Space	<ul style="list-style-type: none">• Use every day language to talk about – size, weight, capacity, position, distance, time, money• Recognise, create and describe patterns• Explore characteristics of objects and shapes – use mathematical language to describe them

Y1

Number & Place Value	Addition, Subtraction,	Multiplication & division	Fractions	Measurement	Properties of shape	Position & Direction
<p>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 2s, 5s and 10s</p> <p>given a number, identify 1 more and 1 less</p> <p>identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least</p> <p>read and write numbers from 1 to 20 in numerals and words.</p>	<p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>represent and use number bonds and related subtraction facts within 20</p> <p>add and subtract one-digit and two-digit numbers to 20, including 0</p> <p>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$.</p>	<p>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.</p> <p>Share and group small amounts</p> <p>Recall double single digit numbers</p>	<p>recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity</p> <p>recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity.</p>	<p>compare, describe and solve practical problems for:</p> <p>lengths and heights [for example, long/short, longer/shorter, tall/short, double/hal]</p> <p>mass / weight</p> <p>capacity and volume</p> <p>time</p> <p>measure and begin to record the following:</p> <p>lengths and heights</p> <p>mass/weight</p> <p>capacity and volume</p> <p>time (hours, minutes, seconds)</p> <p>recognise and know the value of different denominations of coins and notes</p> <p>sequence events in chronological order using language</p> <p>recognise and use language relating to</p>	<p>recognise and name common 2-D and 3-D shapes, including:</p> <p>2-D shapes</p> <p>3-D shapes</p> <p>Recognise the shape in and of everyday objects</p>	<p>describe position, directions and movements, including whole, half, quarter and three-quarter turns.</p>

				<p>dates, including days of the week, weeks, months and years</p> <p>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p>		
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Y2

Number & Place Value	Addition, Subtraction,	Multiplication & division	Fractions	Measurement	Properties of shape	Position & Direction	Statistics
<p>count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</p> <p>recognise the place value of each digit in a two-digit number (10s, 1s)</p> <p>identify, represent and estimate numbers using different representations, including the number line</p> <p>compare and order numbers from 0 up to 100; use <, > and = signs</p> <p>read and write numbers to at least 100 in numerals and in words</p> <p>use place value and number facts to solve problems.</p>	<p>solve problems with addition and subtraction:</p> <p>using concrete objects and pictorial representations, including those involving numbers, quantities and measures</p> <p>applying their increasing knowledge of mental and written methods</p> <p>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <p>a two-digit number and 1s</p> <p>a two-digit number and 10s</p> <p>2 two-digit numbers</p> <p>adding 3 one-digit numbers</p>	<p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</p> <p>show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot</p> <p>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p>	<p>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</p> <p>write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p> <p>compare and order lengths, mass, volume/capacity and record the results using >, < and =</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> <p>compare and sequence intervals of time</p>	<p>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> <p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p> <p>identify 2-D shapes on the surface of 3-D shapes</p> <p>compare and sort common 2-D and 3-D shapes and everyday objects.</p>	<p>order and arrange combinations of mathematical objects in patterns and sequences</p> <p>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>interpret and construct simple pictograms, tally charts, block diagrams and 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>

	<p>show that addition of 2 numbers can be done in any order (commutative) and subtraction of one number from another cannot</p> <p>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p>			<p>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>			
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Y3

Number & Place Value	Addition, Subtraction,	Multiplication & division	Fractions	Measurement	Properties of shape	Statistics
<p>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</p> <p>recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)</p> <p>compare and order numbers up to 1,000</p> <p>identify, represent and estimate numbers using different representations</p> <p>read and write numbers up to 1,000 in numerals and in words</p> <p>solve number problems and practical problems involving these ideas.</p>	<p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> a three-digit number and 1s a three-digit number and 10s a three-digit number and 100s <p>add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction</p> <p>estimate the answer to a calculation and use inverse operations to check answers</p> <p>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>	<p>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>write and calculate 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</p> <p>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.</p>	<p>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</p> <p>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>add and subtract fractions with the same denominator within one whole</p> <p>compare and order unit fractions, and fractions with the same denominators</p> <p>solve problems that involve all of the above.</p>	<p>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>measure the perimeter of simple 2-D shapes</p> <p>add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <p>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>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, am/pm, morning, afternoon, noon and midnight</p> <p>know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>compare durations of events</p>	<p>draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</p> <p>recognise angles as a property of shape or a description of a turn</p> <p>identify right angles, recognise that 2 right angles make a half-turn, 3 make three quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle</p> <p>identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p>interpret and present data using bar charts, pictograms and tables</p> <p>solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.</p>

Number & Place Value	Addition, Subtraction,	Multiplication & division	Fractions (Dec & %)	Measurement	Properties of shape	Position & direction	Statistics
<p>count in multiples of 6, 7, 9, 25 and 1,000</p> <p>find 1,000 more or less than a given number</p> <p>count backwards through 0 to include negative numbers</p> <p>recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s and 1s)</p> <p>order and compare numbers beyond 1,000</p> <p>identify, represent and estimate numbers using different representations</p> <p>round any number to the nearest 10, 100 or 1,000</p> <p>solve number and practical problems that involve all of the above and with increasingly large positive numbers</p> <p>read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the</p>	<p>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p> <p>estimate and use inverse operations to check answers to a calculation</p> <p>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>recall multiplication and division facts for multiplication tables up to 12 x 12</p> <p>use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers</p> <p>recognise and use factor pairs and commutativity in mental calculations</p> <p>multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</p>	<p>recognise and show, using diagrams, families of common equivalent fractions</p> <p>count up and down in hundredths; recognise that hundredths arise when dividing an object by a 100 and dividing tenths by 10.</p> <p>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</p> <p>add and subtract fractions with the same denominator</p> <p>recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$</p> <p>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</p>	<p>convert between different units of measure</p> <p>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>find the area of rectilinear shapes by counting squares</p> <p>estimate, compare and calculate different measures, including money in pounds and pence</p> <p>read, write and convert time between analogue and digital 12 and 24-hour clocks</p> <p>solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days</p>	<p>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>identify acute and obtuse angles and compare and order angles up to 2 right angles by size</p> <p>identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>complete a simple symmetric figure with respect to a specific line of symmetry.</p>	<p>describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>describe movements between positions as translations of a given unit to the left/right and up/down</p> <p>plot specified points and draw sides to complete a given polygon.</p>	<p>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</p> <p>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>

<p>concept of 0 and place value.</p>			<p>round decimals with 1 decimal place to the nearest whole number</p> <p>compare numbers with the same number of decimal places up to 2 decimal places</p> <p>solve simple measure and money problems involving fractions and decimals to 2 decimal places.</p>				
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Number & Place Value	Addition, Subtraction	Multiplication & division	Fractions (Dec & %)	Measurement	Properties of shape	Position & direction	Statistics
<p>read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit</p> <p>count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000</p> <p>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0</p> <p>round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000</p> <p>solve number problems and practical problems that involve all of the above</p> <p>read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.</p>	<p>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>add and subtract numbers mentally with increasingly large numbers</p> <p>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>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</p> <p>multiply and divide numbers mentally drawing upon known facts</p> <p>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</p>	<p>Ma5/2.4a compare and order fractions whose denominators are all multiples of the same number</p> <p>Ma5/2.4b identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Ma5/2.4c recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number</p> <p>Ma5/2.4d add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>Ma5/2.4e multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>Ma5/2.4f read and write decimal numbers as fractions</p>	<p>Ma5/3.1a convert between different units of metric measure</p> <p>Ma5/3.1b understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Ma5/3.1c measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Ma5/3.1d calculate and compare the area of rectangles (including squares) including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</p> <p>Ma5/3.1e estimate volume and capacity</p> <p>Ma5/3.1f solve problems involving converting between units of time</p> <p>Ma5/3.1g use all four operations to solve problems involving measure using decimal</p>	<p>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</p> <p>draw given angles, and measure them in degrees (°)</p> <p>identify:</p> <p>angles at a point and 1 whole turn (total 360°)</p> <p>angles at a point on a straight line and half a turn (total 180°)</p> <p>other multiples of 90°</p> <p>use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p>	<p>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.</p>	<p>solve comparison, sum and difference problems using information presented in a line graph</p> <p>complete, read and interpret information in tables, including timetables.</p>

		<p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</p> <p>recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)</p> <p>solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes</p> <p>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p>	<p>Ma5/2.4g recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>round decimals with 2 decimal places to the nearest whole number and to 1 decimal place</p> <p>read, write, order and compare numbers with up to 3 decimal places</p> <p>solve problems involving number up to 3 decimal places</p> <p>recognise the per cent symbol (%) and understand that per cent relates to “number of parts per 100”, and write percentages as a fraction with denominator 100, and as a decimal fraction</p> <p>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.</p>	<p>notation including scaling.</p>			
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Number & Place Value	Addition, Subtraction, Multiplication & division	Fractions (Dec & %)	Ratio & Proportion	Algebra	Measurement	Properties of shape	Position & direction	Statistics
<p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p> <p>round any whole number to a required degree of accuracy</p> <p>use negative numbers in context, and calculate intervals across 0</p> <p>solve number and practical problems that involve all of the above.</p>	<p>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>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</p> <p>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</p> <p>perform mental calculations, including with mixed operations and large numbers.</p>	<p>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>compare and order fractions, including fractions >1</p> <p>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>multiply simple pairs of proper fractions, writing the answer in its simplest form</p> <p>divide proper fractions by whole numbers</p> <p>associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.</p> <p>identify the value of each digit in</p>	<p>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>solve problems involving the calculation of percentages and the use of percentages for comparison</p> <p>solve problems involving similar shapes where the scale factor is known or can be found</p> <p>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>	<p>use simple formulae</p> <p>generate and describe linear number sequences</p> <p>express missing number problems algebraically</p> <p>find pairs of numbers that satisfy an equation with two unknowns</p> <p>enumerate possibilities of combinations of 2 variables.</p>	<p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to 2 decimal places where appropriate</p> <p>use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places</p> <p>convert between miles and kilometres</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>recognise when it is possible to use formulae for area and volume of shapes</p>	<p>draw 2-D shapes using given dimensions and angles</p> <p>recognise, describe and build simple 3-D shapes, including making nets</p> <p>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p> <p>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p>	<p>describe positions on the full coordinate grid (all 4 quadrants)</p> <p>draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>	<p>interpret and construct pie charts and line graphs and use these to solve problems</p> <p>calculate and interpret the mean as an average.</p>

	<p>identify common factors, common multiples and prime numbers</p> <p>use their knowledge of the order of operations to carry out calculations involving the 4 operations</p> <p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>solve problems involving addition, subtraction, multiplication and division</p> <p>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>	<p>numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers are up to three decimal places</p> <p>multiply one-digit numbers with up to 2 decimal places by whole numbers</p> <p>use written division methods in cases where the answer has up to 2 decimal places</p> <p>solve problems which require answers to be rounded to specified degrees of accuracy</p> <p>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p>			<p>calculate the area of parallelograms and triangles</p> <p>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units</p>			
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