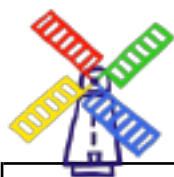


Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document

<u>EYFS</u>		<u>Key Stage 1</u>		<u>Key Stage 2</u>			
Number = Number and Place Value							
3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recite numbers past 5. • Say one number name for each item in order: 1, 2, 3, 4, 5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').	Count objects, actions and sounds. • Count beyond ten. Subitise. • Link the number symbol (numeral) with its cardinal number value. Compare numbers.	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Count, read and write numbers to 100 in numerals; count in multiples of	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number (Year 1) Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens (Year 1)	Recognise the place value of each digit in a two-digit number (tens, ones) (Year 2) compare and order numbers up to 1,000 count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number Identify,	Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) Count in multiples of 6, 7, 9, 25 and 1,000 Identify, represent and estimate numbers using different	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	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

<p>Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</p> <ul style="list-style-type: none"> • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 • Experiment with their own symbols 	<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>Understand the 'one more than/one less than' relationship between consecutive numbers.</p> <ul style="list-style-type: none"> • Explore the 	<p>5s and 10s^{2s,}</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</p>	<p>recognise the place value of each digit in a Two-digit number (tens, ones)</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>count in steps of 2, 3, and 5 from 0, and in tens from</p>	<p>represent and estimate numbers using different representations</p> <p>recognise the place value of each digit in a three-digit number (100s, 10s, 1s),</p>	<p>representations</p> <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</p>	<p>1,000,000^{to}</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</p>	<p>any given number up to 1 000 000</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>Perform mental calculations, including with mixed</p>
--	---	---	--	---	---	---	---

<p>and marks as well as numerals. Link numerals and amounts: for example, showing the right number of objects</p> <p>composition of numbers to 10. Automatically recall number bonds for numbers 0-5 and some to 10.</p>	numerals and				problems that involve all of	
--	--------------	--	--	--	---------------------------------	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

<p>to match the numeral, up to 5.</p> <ul style="list-style-type: none"> • Experiment with their own symbols and marks as well as numerals. <p>Compare quantities using language: 'more than', 'fewer than'. Understand the 'one more than/one less than' relationship</p> <p>between consecutive numbers.</p> <ul style="list-style-type: none"> • Explore the composition of numbers to 10. <p>Solve real world mathematical problems with numbers up to 5.</p>	words	any number, forward and backward		<p>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</p>	<p>the above</p> <p>Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals</p>	<p>operations and large numbers</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</p>
---	-------	----------------------------------	--	---	--	---



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

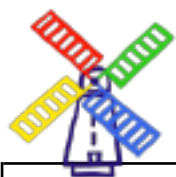
					over time, the numeral system changed to include the concept of 0 and place value		context of a problem, an appropriate degree of accuracy read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
Number - Addition and Subtraction							
3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

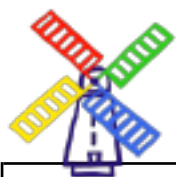
	<p>Automatically recall number bonds for numbers 0-5 and some to 10.</p> <p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.</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</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</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</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</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>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>use rounding to check answers to calculations and determine, in the context of a problem, levels of</p>	<p>add and subtract numbers mentally with increasingly large numbers</p> <p>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>estimate and use inverse operations to check answers to a calculation</p> <p>solve addition and subtraction</p>
--	--	---	--	--	--	---	---



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

		subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$	subtraction facts to 20 fluently, and derive and use related facts up to 100 add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s a two-digit number and 10s 2 two-digit	columnar addition and subtraction estimate the answer to a calculation and use inverse operations to check answers solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	why	accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	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, in the context of a problem, an appropriate degree of accuracy
--	--	--	---	---	-----	--	---



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

			<p>numbers</p> <p>adding 3 one-digit number</p> <p>show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot</p> <p>recognise and use the inverse relationship between addition</p>				
--	--	--	--	--	--	--	--

			and subtraction and use this to check calculations and				
--	--	--	---	--	--	--	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

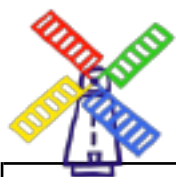
			solve missing number problems				
Number - Multiplication and Division							
3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

		solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical statements for multiplication and division using the	recall multiplication and division facts for multiplication tables up to 12×12 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and	identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers know and use the vocabulary of prime numbers, prime	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
--	--	--	--	--	--	--	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

		<p>support of the teacher</p> <p>Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.</p> <p>They make connections between arrays, number patterns,</p>	<p>statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) 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,</p>	<p>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</p>	<p>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</p>	<p>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</p>	<p>factors and composite (non-prime) numbers</p> <p>recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)</p> <p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p> <p>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written</p>
--	--	--	--	---	---	--	---



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

		and counting in 2s, 5s and 10s	repeated addition, mental methods, and multiplication and division facts, including problems in contexts	connected to m objects	numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	<p>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>multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</p> <p>recognise and use square numbers and</p>	<p>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</p>
--	--	--------------------------------	--	------------------------	--	---	--

						cube numbers, and	
--	--	--	--	--	--	----------------------	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

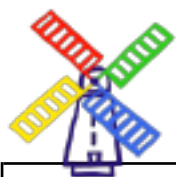
						<p>the notation for squared (²) and cubed (³)</p> <p>solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes</p> <p>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the</p>	<p>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 their knowledge of the order of operations to carry out calculations involving the 4 operations</p> <p>solve addition and subtraction</p>
--	--	--	--	--	--	--	--



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

						<p>equals sign</p> <p>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</p>	<p>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>
--	--	--	--	--	--	---	--



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

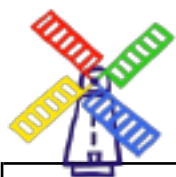
Number = Fractions							
3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>recognise, find and name a half as one of two equal parts of an object, shape or quantity</p>	<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity (yr1)</p> <p>recognise, 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>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>compare and order unit fractions, and fractions with the same denominators</p> <p>recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>add and subtract fractions with</p>	<p>practise counting using simple fractions and decimals, both forwards and backwards</p> <p>Reason about the location of mixed numbers in the linear number system</p> <p>Convert mixed numbers to improper fractions and vice versa</p> <p>recognise and show, using diagrams, families of common equivalent</p>	<p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$]</p> <p>compare and order fractions</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 proper fractions and mixed</p>

			Pupils	the same denominator within one whole	fractions	whose denominators are all	
--	--	--	--------	--	-----------	-------------------------------	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

			<p>should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line (for example, $1\frac{1}{4}$, $1\frac{2}{4}$ (or $1\frac{1}{2}$), $1\frac{3}{4}$, 2).</p>	<p>[for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]</p> <p>solve problems that involve all of the above</p> <p>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p>	<p>add and subtract fractions with the same denominator</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>recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in</p>	<p>multiples of the same number</p> <p>add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>read, write, order and compare numbers with up to three decimal places</p> <p>read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$]</p>	<p>numbers by whole numbers, supported by materials and diagrams</p> <p>multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]</p> <p>divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]</p> <p>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent</p> <p>fractions use written division</p>
--	--	--	--	---	---	--	---



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

					<p>the answer as ones, tenths and hundredths</p> <p>recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>compare numbers with the same number of decimal places up to two decimal places</p>	<p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>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</p> <p>solve problems</p>	<p>methods in cases where the answer has up to two decimal places</p> <p>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</p> <p>solve problems which require answers to be rounded to specified degrees of accuracy</p> <p>multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>use written division methods</p>
--	--	--	--	--	--	--	--

						involving number up to three decimal places	in
--	--	--	--	--	--	--	----



Widmer End Community Combined School and Pre-School
Whole School Maths Progression Document 2023

						<p>read, write, order and compare numbers with up to three decimal places</p> <p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p>	<p>cases where the answer has up to two decimal places</p> <p>associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]</p> <p>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</p> <p>compare and order fractions, including fractions > 1</p> <p>solve problems involving the</p>
--	--	--	--	--	--	--	---



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

							calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
Measurement							
3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Make comparisons between objects relating to size, length, weight and capacity.</p> <p>Begin to describe a sequence of events, real or fictional, using</p>	<p>Compare length, weight and capacity.</p>	<p>compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</p> <p>measure and begin to record the following: lengths</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>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>measure the perimeter of simple 2D shapes</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>Convert between different units of</p>	<p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>calculate and compare the area of rectangles (including squares), and</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 three decimal</p>



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

words, such as 'first', 'then...'		<p>and heights</p> <p>measure and begin to record the following: mass/weight</p> <p>compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than]</p> <p>compare, describe and solve practical problems for: capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</p> <p>measure and begin to record the following: capacity</p>	<p>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p> <p>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>compare and order lengths, mass,</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, a.m./p.m., morning, afternoon, noon and midnight</p> <p>know the number of</p>	<p>measure [for example, kilometre to metre; hour to minute]</p> <p>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>estimate, compare and calculate different measures, including money in pounds and pence</p> <p>Convert between different units of measure [for example, kilometre to metre; hour to minute]</p>	<p>including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</p> <p>convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p>	<p>places</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>Convert between miles and kilometres</p> <p>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p>
-----------------------------------	--	--	---	--	--	---	---



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

		<p>volume and</p> <p>recognise and know the value of different denominations of coins and notes</p> <p>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>recognise and use language relating to dates, including days of the week, weeks, months and years</p>	<p>volume/capacity and record the results using $>$, $<$ and $=$</p> <p>solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures</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 (Year 1)</p> <p>tell and write the time to five minutes,</p>	<p>seconds in a minute and the number of days in each month, year and leap year</p> <p>compare durations of events [for example to calculate the time taken by particular events or tasks].</p>		<p>solve problems involving converting between units of time</p> <p>use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling</p> <p>estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]</p>	<p>calculate the area of parallelograms and triangles</p> <p>recognise when it is possible to use formulae for area and volume of shapes</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 [for example, mm³ and km³]</p>
--	--	--	---	---	--	---	--

		tell the time to the hour and half past the hour and	including quarter past/to the hour and draw the hands on a clock face to show				
--	--	---	---	--	--	--	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

		draw the hands on a clock face to show these times	these times know the number of minutes in an hour and the number of hours in a day				
--	--	--	---	--	--	--	--

Geometry = Properties of Shape

3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
-----------------	-----------	--------	--------	--------	--------	--------	--------

<p>Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'.</p> <p>• Select shapes appropriately: flat</p>	<p>• Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p> <p>Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as</p>	<p>recognise and name common 2D and 3D shapes, including: 3D shapes [for example, cuboids (including cubes), pyramids and spheres].</p> <p>Recognise and name common 2D and 3D shapes, including: 2D</p>	<p>compare and sort common 2D and 3D shapes and everyday objects.</p> <p>identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line</p>	<p>recognise angles as a property of shape or a description of a turn</p> <p>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</p>	<p>identify acute and obtuse angles and compare and order angles up to two right angles by size</p> <p>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</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 (o)</p> <p>identify: -angles at a point and one whole</p>	<p>draw 2D shapes using given dimensions and angles</p> <p>6 6C</p> <p>Geometry - properties of shape 13</p> <p>Geometry -</p>
--	---	--	--	--	---	--	--



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

<p>surfaces for a building, a triangular pattern for a roof, etc.</p> <ul style="list-style-type: none"> • Combine shapes to make new ones - an arch, a bigger triangle, etc. 	<p>numbers can.</p>	<p>shapes [for example, rectangles (including squares), circles and triangles].</p>	<p>order and arrange combinations of mathematical objects in patterns and sequences</p> <p>identify and describe the properties of 3D shapes, including the number of edges, vertices and faces</p>	<p>whether angles are greater than or less than a right angle</p> <p>draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them</p> <p>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>	<p>Identify lines of symmetry in 2D shapes presented in different orientations</p> <p>complete a simple symmetric figure with respect to a specific line of symmetry</p>	<p>turn (total 360o)</p> <ul style="list-style-type: none"> - angles at a point on a straight line and 1/2 a turn (total 180o) - other multiples of 90o <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 horizontal and vertical lines and pairs of perpendicular and parallel lines (Year 3)</p>	<p>properties of shape 2</p> <p>Vertically opposite angles</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>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 th</p>
--	---------------------	---	---	---	--	--	---

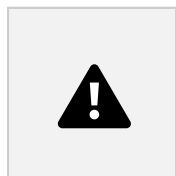


Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

						identify 3D shapes, including cubes and other cuboids, from 2D representations	radius ^e draw 2D shapes using given dimensions and angles recognise, describe and build simple 3D shapes, including making nets
Geometry = Position and Direction							
3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Understand position through words alone – for example, “The bag is under the table,” – with no pointing. • Describe a familiar route. • Discuss routes	• Draw information from a simple map. Continue, copy and create repeating patterns.	describe position, direction and movement, including whole, half, quarter and three-quarter turns Pupils use the language of position, direction and	use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing		Describe positions on a 2D grid as coordinates in the first quadrant plot specified points and draw sides to complete a given polygon	Describe positions on a 2D grid as coordinates in the first quadrant (Year 4) identify, describe and represent the position of a shape following	describe positions on the full coordinate grid (all four quadrants) draw and translate simple shapes on the coordinate plane, and reflect them

		motion,	between rotation as a turn and in terms of right		describe movements	a reflection or	in the axes
--	--	---------	---	--	--------------------	--------------------	-------------



Widmer End Community Combined School and Pre-School Whole School Maths Progression Document 2023

<p>and locations, using words like 'in front of' and 'behind'.</p> <p>Talk about and identify the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.</p> <ul style="list-style-type: none"> • Extend and create ABAB patterns - stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. 		<p>including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.</p> <p>Pupils practise counting (1, 2, 3...), ordering (for example, first, second, third...), and to indicate a quantity (for example, 3 apples, 2 centimetres), including solving simple concrete problems, until they are fluent.</p>	<p>angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).</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 (Year 1)</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>		<p>between positions as translations of a given unit to the left/right and up/down</p>	<p>translation, using the appropriate language, and know that the shape has not changed</p> <p>identify lines of symmetry in 2D shapes presented in different orientations (Year 4)</p>	
---	--	--	---	--	--	---	--



Widmer End Community Combined School and Pre-School

Whole School Maths Progression Document 2023

Statistics:

3 and 4 yr olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Experiment with their own symbols and marks, as well as numerals.			<p>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>	interpret and present data using bar charts, pictograms and tables	<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>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>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>