

St William of Perth-
Maths Curriculum Map

NUMBER

Early Years Foundation Stage

Number Patterns:

- Count numbers in order.
- Count objects, matching one number name to each object.
- Articulate how many objects are in a group.
- Estimate how many object may be in a group before counting to develop their understanding of the cardinal counting principle.
- Give a purpose to counting.
- Count a smaller amount from a larger group of objects.
- Linking numerals with its cardinal value.
- To verbally count to 20.
- To compare numbers, using the vocabulary 'more than', 'less than', 'fewer', 'the same as', 'equal to'.
- To understand the relationship between two consecutive numbers.
- Children will identify odd and even numbers to 10.

Number:

- To explore the composition of numbers to 10
- Subitising - to recognise amounts from familiar and unfamiliar arrangements.
- Recall number bonds for numbers 0-5 and some to 10.
- Children will double numbers to 5 and some to 10.

Key Stage 1

	Place Value	Addition & Subtraction	Multiplication & Division	Fractions		
1	<ul style="list-style-type: none"> - Count to and across 100 - Count in multiples of 2, 5 and 10 - Identify one more and less. - Read and write numbers to 20 in numerals and words Identify and represent numbers using: number lines 	<ul style="list-style-type: none"> -Read, write and interpret mathematical statements using + , - and = . -Represent and use number bonds and related facts within and to 20 -Add and subtract one digit and two-digit numbers to 20 including 0 -Solve one step problems using addition and subtraction, using concrete pictorial representations and missing number problems 	<ul style="list-style-type: none"> - Use concrete, pictorial and abstract representations and arrays to solve one step problems involving multiplication and division <p><i><u>Non Statutory</u></i> <i>Use grouping, sharing to understanding multiplication and division</i></p>	<ul style="list-style-type: none"> -Recognise, find and name a half as two equal parts of a whole amount (shape or quantity) -Recognise, find and name a quarter as 4 equal parts of a whole amount (shape or quantity) <p><i><u>Non Statutory</u></i> <i>-Connect halves and quarters to the equal sharing and grouping of sets of objects and to measures.</i></p>		

	<p>Compare numbers using language of more, less and equal to</p> <p><u>Non Statutory</u> -Practise counting (1, 2, 3...), ordering to indicate a quantity, including solving simple concrete problems. -Recognise place value in numbers by reading, writing, counting and comparing numbers up to 100</p> <p>Practise counting as reciting numbers and counting as enumerating objects, counting in twos, fives and tens from different multiples to develop recognition of patterns in the number system i.e odd and even</p>	<p><u>Non Statutory</u> -Memorise and reason with number bonds to 10 and 20 in several forms (for example, $9 + 7 = 16$; $16 - 7 = 9$; $7 = 16 - 9$). -Understand the effect of adding or subtracting zero. -Understand addition and subtraction as related operations. -Combine and increase numbers, counting forwards and backwards. -Discuss and solve problems in familiar practical contexts, including using quantities.</p> <p>-Understand the terms: 'put together', 'add', 'altogether', 'total', 'take away', 'difference between', 'more than' and 'less than', to develop the concept of addition and subtraction and ability to use these operations flexibly.</p>		<p>-Recognising and combining halves and quarters as parts of a whole.</p>		
2	<p>-Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward -Recognise the place value of each digit in a two-digit number (tens, ones) -Identify, represent and estimate numbers using different representations,</p>	<p>-To solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures by applying their increasing knowledge of mental and written methods -Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p>	<p>-Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers - Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times),</p>	<p>-To recognise, find, name and write fractions $\frac{1}{5}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity - 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><u>Non Statutory</u> -Half and quarter as 'fractions of' discrete and continuous quantities by solving problems</p>		

<p>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 use place value and number facts to solve problems.</p> <p><u>Non Statutory</u></p> <p><i>-Practise counting, reading, writing and comparing numbers to at least 100 and solving a variety of related problems to develop fluency.</i></p> <p><i>-Count in multiples of three to support later understanding of a third.</i></p> <p><i>-Partition numbers in different ways to support subtraction.</i></p> <p><i>-Apply knowledge of numbers to reason with, discuss and solve problems that emphasise the value of each digit in two-digit numbers. -Begin to understand zero as a place holder.</i></p>	<p>-Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers</p> <p>-Show that addition of two 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><u>Non Statutory</u></p> <p><i>-Extend understanding of the language of addition and subtraction to include sum and difference.</i></p> <p><i>-Practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using $3 + 7 = 10$; $10 - 7 = 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$</i></p> <p><i>-Check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, $5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5$).</i></p> <p><i>-Recording addition and subtraction in columns to</i></p>	<p>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, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p> <p><u>Non Statutory</u></p> <p><i>-Grouping and sharing small quantities.</i></p> <p><i>-Doubling and halving numbers and quantities. and finding simple fractions of objects, numbers and quantities.</i></p> <p><i>-Arrays, number patterns, and counting in 2s, 5s and 10s.</i></p>	<p><i>using shapes, objects and quantities.</i></p> <p><i>- Connect halves and quarters to the equal sharing and grouping of sets of objects and to measures, - Recognising and combining halves and quarters as parts of a whole.</i></p>			
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support place value and prepares for formal written methods with larger numbers.

Lower Key Stage 2

	Place Value	Addition & Subtraction	Multiplication & Division	Fractions	Decimals & Percentages
3	<p>-Count from 0 in multiples of 4, 8, 50 and 100.</p> <p>-Compare and order numbers up to 1000.</p> <p>-Read and write numbers up to 1000 in numerals and in words.</p> <p>-Find 10 or 100 more or less than a given number.</p> <p>-Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p> <p>-Identify, represent and estimate numbers using different representations.</p> <p>-Solve number problems and practical problems involving.</p> <p><u>Non Statutory</u> -Use multiples of 2, 3, 4, 5, 8, 10, 50 and 100. -Use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example, $146 = 100 + 40$ and $6, 146 = 130 + 16$).</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><u>Non Statutory</u> Practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100. Apply understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large</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 are known, 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><u>Non Statutory</u> -Continue to practise mental recall of multiplication tables when calculating mathematical statements, in order to improve fluency. -Through doubling, children connect the 2, 4 and 8 multiplication tables -Develop efficient mental methods, for example, using commutativity and</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 [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$].</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><u>Non Statutory</u> Connect tenths to place value, decimal measures and to division by 10. Begin to understand unit and non-unit fractions as numbers</p>	

	<p>-Use a variety of representations, including those related to measure to continue to count in ones, tens and hundreds, to support fluency in the order and place value of numbers to 1000.</p>	<p>numbers up to three digits to become fluent</p>	<p>associativity (for example, $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$) and multiplication and division facts (for example, using $3 \times 2 = 6$, $6 \div 3 = 2$ and $2 = 6 \div 3$) to derive related facts (for example, $30 \times 2 = 60$, $60 \div 3 = 20$ and $20 = 60 \div 3$).</p> <p>-Develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.</p> <p>-Solve simple problems in contexts, deciding which of the four operations to use and why.</p>	<p>on the number line, and deduce relations between them, such as size and equivalence. They should go beyond the $[0, 1]$ interval, including relating this to measure.</p> <p>-Pupils understand the relation between unit fractions as operators (fractions of), and division by integers.</p> <p>-Continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.</p> <p>-Practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency.</p>		
4	<p>-Represent and partition numbers to 10,000</p> <p>-Number lines to 10,000</p> <p>-Find 1000 more or less than a given number</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>-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 1s, 10s, 100s, 1000s</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>-Estimating addition and subtraction answers</p>	<p>-Multiply and divide by 3, 6, 9, 7, 11 and 12</p> <p>-Count in multiples of 25 and 1,000</p> <p>-Recall multiplication and division facts for multiplication tables up to 12×12</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>dividing a number by itself</p> <p>recognise and use factor pairs and commutativity in mental calculations</p>	<p>-Recognise and show, using diagrams, families of common equivalent fractions</p> <p>-Compare and order mixed numbers</p> <p>-Convert between mixed numbers and improper fractions</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 (including mixed numbers and whole numbers)</p>	<p>-Tenths and hundredths as decimals and fractions</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>-Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10</p> <p>recognise and write decimal equivalents of any number of tenths or hundreds</p>	

	<p>concept of 0 and place value</p> <ul style="list-style-type: none"> -Count backwards through 0 to include negative number -Order and compare numbers beyond 1,000 <p>solve number and practical problems that involve all of the above and with increasingly large positive numbers</p>	<p>-Checking strategies for addition and subtraction</p>	<ul style="list-style-type: none"> -Multiply by 10 and 100 multiply two-digit and three-digit numbers by a one-digit number using formal written layout divide two-digit and three-digit numbers by a one-digit number using formal written layout 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>-Solve simple measure and money problems involving fractions</p>	<p>recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$</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 decimals to 2 decimal places</p>	
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Upper Key Stage 2

	Place Value	Addition & Subtraction	Multiplication & Division	Fractions Decimals & Percentages	Algebra & Ratio
5	<ul style="list-style-type: none"> -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 to 1,000,000 -Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 -Round any number up to 1,000,000 to the 	<ul style="list-style-type: none"> -Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) -Add and subtract numbers mentally with increasingly large numbers -Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy -Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> -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 factors and composite (non-prime) numbers -Establish whether a number up to 100 is prime and recall prime numbers up to 19 -Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including 	<ul style="list-style-type: none"> -Compare and order fractions whose denominators are all multiples of the same number -Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths -Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] -Add and subtract fractions with the same denominator, and denominators that are multiples of the same number -Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 	

	<p>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>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>-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>-Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]</p> <p>-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 $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25</p>	
6	<p>- Read, write, order and compare numbers to</p>	<p>- perform mental calculations, including</p>	<p>- multiply multi-digit numbers up to 4 digits by a two-digit whole</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>- Solve problems involving the relative sizes of two quantities</p>

	<p>10,000,000 and determine the value of each digit</p> <ul style="list-style-type: none"> - Round any whole number to a required degree of accuracy - Use negative numbers in context and calculate intervals across zero - Use negative numbers in context, and calculate intervals across zero - Solve number and practical problems that involve all of the above - Pupils use the whole number system, including saying, reading and writing numbers accurately. 	<p>with mixed operations and large numbers</p> <ul style="list-style-type: none"> - use their knowledge of the order of operations to carry out calculations involving the four operations - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy - Practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division - Undertake mental calculations with increasingly large numbers and more complex calculations 	<p>number using the formal written method of long multiplication</p> <ul style="list-style-type: none"> - divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context - divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context - perform mental calculations, including with mixed operations and large numbers - identify common factors, common multiples and prime numbers - use their knowledge of the order of operations to carry out calculations involving the four operations - solve problems involving addition, subtraction, multiplication and division - use estimation to check answers to calculations and determine, in the 	<ul style="list-style-type: none"> - Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions - Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $1/4 \times 1/2 = 1/8$] - divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$] - associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $3/8$] - identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places - multiply one-digit numbers with up to two decimal places by whole numbers - use written division methods in cases where the answer has up to two decimal places - solve problems which require answers to be rounded to specified degrees of accuracy - recall and use equivalences between simple fractions, decimals and percentages, including in different contexts - should practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other (for example, $2 \frac{1}{4} + 8 \frac{1}{4} = 8 \frac{5}{4}$) and progress to varied and increasingly complex problems - Should use a variety of images to support their understanding of multiplication with fractions. This follows earlier work about fractions as operators (fractions of), as numbers, and as equal parts of objects, for example as parts of a rectangle. - Use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity (for example, if $\frac{1}{4}$ of a length is 36cm, then the whole length is $36 \times 4 = 144$cm) - Practise calculations with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators 	<p>where missing values can be found by using integer multiplication and division facts</p> <ul style="list-style-type: none"> - Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison - Solve problems involving similar shapes where the scale factor is known or can be found - Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. - Recognise proportionality in contexts when the relations between quantities are in the same ratio (for example, similar shapes and recipes). - Link percentages or 360° to calculating angles of pie charts. - Consolidate understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems. - Solve problems involving unequal quantities, for example,
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			<p>context of a problem, an appropriate degree of accuracy</p> <ul style="list-style-type: none"> - Pupils practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division - undertake mental calculations with increasingly large numbers and more complex calculations - continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency - Pupils round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc., but not to a specified number of significant figures. Pupils explore the order of operations using brackets; for example, $2 + 1 \times 3 = 5$ and $(2 + 1) \times 3 = 9$. Common factors can be related to finding equivalent fractions. 	<ul style="list-style-type: none"> - Explore and make conjectures about converting a simple fraction to a decimal fraction (for example, $3 \div 8 = 0.375$). For simple fractions with recurring decimal equivalents, pupils learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context. Pupils multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers. Pupils multiply decimals by whole numbers, starting with the simplest cases, such as $0.4 \times 2 = 0.8$, and in practical contexts, such as measures and money - are introduced to the division of decimal numbers by one-digit whole number, initially, in practical contexts involving measures and money. They recognise division calculations as the inverse of multiplication - also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. This includes rounding answers to a specified degree of accuracy and checking the reasonableness of their answers 	<p>‘for every egg you need three spoonfuls of flour’, ‘5/3 of the class are boys’. These problems are the foundation for later formal approaches to ratio and proportion.</p> <ul style="list-style-type: none"> - use simple formulae - generate and describe linear number sequences - express missing number problems algebraically - find pairs of numbers that satisfy an equation with two unknowns - enumerate possibilities of combinations of two variables. <p>should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as:</p> <ul style="list-style-type: none"> - missing numbers, lengths, coordinates and angles - formulae in mathematics and science - equivalent expressions (for example, $a + b = b + a$) - generalisations of number patterns - number puzzles (for example, what two numbers can add up to)
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SWOP - Maths Curriculum Map

GEOMETRY

Early Years Foundation Stage	
<i>Provision areas provide children with opportunities to discuss and explore shape</i>	
Key Stage 1	
Shape/Geometry	Position and Direction
<p>1 -Recognise, identify and name common 2D shapes -Recognise, identify and name common 3D shapes</p> <p><u>Non Statutory</u> <i>-Recognise and create repeating patterns with objects and with shapes.</i></p>	<p>-Describe position and direction and movement including whole, three quarter, half and one quarter turns. -Use language of: left, right, above, below, in between, forwards and backwards</p>
<p>2 -Recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> ● 2-D shapes [for example, rectangles (including squares), circles and triangles] ● 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	<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>
Key Stage 2	
<p>3 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 horizontal and vertical lines and pairs of perpendicular and parallel lines.</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>4 -Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes -Identify acute and obtuse angles and compare and order angles up to 2 right angles by size -Identify lines of symmetry in 2-D shapes presented in different orientations -Complete a simple symmetric figure with respect to a specific line of symmetry</p>	<ul style="list-style-type: none"> - describe positions on a 2-D grid as coordinates in the first quadrant - describe movements between positions as translations of a given unit to the left/right and up/down - plot specified points and draw sides to complete a given polygon
<p>5</p> <ul style="list-style-type: none"> - Identify 3-D shapes, including cubes and other cuboids, from 2-D representations -Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles -Draw given angles, and measure them in degrees (°) -Identify: <ul style="list-style-type: none"> -Angles at a point and 1 whole turn (total 360°) 	<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>

<ul style="list-style-type: none"> -Angles at a point on a straight line and half a turn (total 180°) -Other multiples of 90° -Use the properties of rectangles to deduce related facts and find missing lengths and angles -Distinguish between regular and irregular polygons based on reasoning about equal sides and angles 	
<p>6</p> <ul style="list-style-type: none"> - draw 2-D shapes using given dimensions and angles - recognise, describe and build simple 3-D shapes, including making nets - compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons - illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius - recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. - draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles - describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements - relationships might be expressed algebraically for example, $d = 2 \times r$; $a = 180 - (b + c)$. 	<ul style="list-style-type: none"> - Describe positions on the full coordinate grid (all four quadrants) - Draw and translate simple shapes on the coordinate plane, and reflect them in the axes - Draw and label a pair of axes in all four quadrants with equal scaling. This extends their knowledge of one quadrant to all four quadrants, including the use of negative numbers - Draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes. These might be expressed algebraically for example, translating vertex (a, b) to $(a - 2, b + 3)$; (a, b) and $(a + d, b + d)$ being opposite vertices of a square of side d

SWOP - Maths Curriculum Map

MEASUREMENT

Early Years Foundation Stage						
<i>Provision areas provide children with opportunities to discuss and explore space and measure</i>						
Key Stage 1						
	Length and Height	Weight	Capacity/Volume	Time	Money	
1	<p>Compare, describe and solve problems involving length and height [for example, long/short, longer/shorter, tall/short, double/half] Measure and begin to record length and height</p> <p>Non Statutory Pupils move from using and comparing different types of quantities and measures using non-standard units, to using manageable common standard units.</p> <p>In order to become familiar with standard measures, pupils begin to use measuring tools such as a ruler</p>	<p>Compare, describe and solve problems involving weight and mass [for example, heavy/light, heavier than, lighter than] Measure and begin to record weight and mass</p> <p>Non Statutory Pupils move from using and comparing different types of quantities and measures using non-standard units, to using manageable common standard units.</p> <p>In order to become familiar with standard measures, pupils begin to use measuring tools such as weighing scales</p>	<p>Compare, describe and solve problems involving volume and capacity [for example, full/empty, more than, less than, half, half full, quarter] Measure and begin to record capacity and volume</p> <p>Non Statutory Pupils move from using and comparing different types of quantities and measures using non-standard units, to using manageable common standard units.</p> <p>In order to become familiar with standard measures, pupils begin to use measuring tools such as weighing scales</p>	<p>Compare, describe and solve problems involving time [for example, quicker, slower, earlier, later] Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] Measure and begin to record time (hours, minutes, seconds) Recognise and use language relating to dates, including days of the week, weeks, months and years 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>Non Statutory Pupils use the language of time, including telling the time throughout the day, first using o'clock and then half past.</p>	<p>Recognise and know the value of different denominations of coins and notes</p>	
2	<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,</p>	<p>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temp(°C); capacity (litres/ml) to the nearest appropriate unit,</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,</p>	<p>compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</p>	<p>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</p>	

	scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and =	using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and = erature	thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and =	know the number of minutes in an hour and the number of hours in a day	solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	
Lower Key Stage 2						
	Length and Perimeter	Weight	Capacity/Volume	Time	Money	
3	-Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). -Measure the perimeter of simple 2-D shapes.	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. -Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight. -Know the number of seconds in a minute and the number of days in each month, year and leap year. -Compare durations of events [for example, to calculate the time taken by particular events or tasks].	-Add and subtract amounts of money to give change, using both £ and p in practical contexts.	
4	- Measure and calculate the perimeter of a rectilinear	-Convert between different units of measure [for example, kilometre to metre; kilogram to gram]		- Read, write and convert time between analogue	- Calculate different measures, including	

figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares estimate, compare and		and digital 12- and 24-hour clocks - Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days	money in pounds and pence - Convert between different units of measure [for example, kilometre to metre; kilogram to gram, hour to minute]
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Upper Key Stage 2

	Perimeter and Area	Weight/length	Capacity/Volume	Time	Money	Temperature
5	<ul style="list-style-type: none"> - Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres - 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 - Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] 	<ul style="list-style-type: none"> - Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre] 	<ul style="list-style-type: none"> - Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] 	<ul style="list-style-type: none"> -Solve problems involving converting between units of time 	<ul style="list-style-type: none"> -Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling 	
6	<ul style="list-style-type: none"> - Recognise that shapes with the same areas can have different perimeters and vice versa - recognise when it is possible to use formulae for area of shapes - calculate the area of parallelograms and triangles 	<ul style="list-style-type: none"> - Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate - use, read, write and convert between standard units, converting measurements of length, mass, volume 	<p>Recognise when it is possible to use formulae for volume of shapes 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>			<ul style="list-style-type: none"> - Using the number line, pupils use, add and subtract positive and negative integers for measures such as temperature

		<p>and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</p> <ul style="list-style-type: none">- convert between miles and kilometres- connect conversion (for example, from kilometres to miles) to a graphical representation as preparation for understanding linear/proportional graphs- know approximate conversions and are able to tell if an answer is sensible				
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SWOP - Maths Curriculum Map

STATISTICS

1	<i>Non statutory for this year group. However, statistics is introduced through cross curricular links For example, pictograms in Science and other data collection based activities.</i>
2	<ul style="list-style-type: none">-To interpret and construct simple pictograms, tally charts, block diagrams and tables.-To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.-Ask and answer questions about totalling and comparing categorical data.
3	<ul style="list-style-type: none">-Interpret and present data using bar charts, pictograms and tables.-Solve one-step and two-step questions [for example 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.
4	<ul style="list-style-type: none">-Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs-Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
5	-Solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables
6	<ul style="list-style-type: none">- Interpret and construct pie charts and line graphs and use these to solve problems- Calculate and interpret the mean as an average- Connect their work on angles, fractions and percentages to the interpretation of pie charts- Encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects- Connect conversion from kilometres to miles in measurement to its graphical representation- Know when it is appropriate to find the mean of a data set.