

Strand	EYFS	KS1	LKS2	UKS2
<b>1. Know and use whole numbers</b>				
Place value of integers		Recognise the place value of each digit in a two-digit number (tens, ones).	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)  Round any number to the nearest 10, 100 or 1000.	Determine the value of each digit in any number  Round any whole number to a required degree of accuracy.
Comparing	Compare 2 sets using 'more' and 'fewer' and saying when they have the same number  <i>Place numbers 1-20 in order (ELG)</i>	Use the language of: equal to, more than, less than (fewer), most and least.  Compare and order numbers from 0 up to 100; use <, > and = signs.	Order and compare numbers beyond 100	Order and compare numbers up to 10 000 000
Counting	<i>Count reliably with numbers from 1 to 20 (ELG)</i>  To count up to 10 objects or actions  To estimate how many objects they can see  <i>Say which number is one more and one less than a given number up to 20 (ELG)</i>	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.  Read and write numbers to 100 in numerals  Given a number, identify one more and one less.  Count in steps of 2, 3, 5 and 10 from 0 or 1 and in tens from any number, forward and backward.	Count backwards through zero to include negative numbers.  <b>Read numbers to 10 000</b>  Find <b>10,100</b> , 1000 more or less than a given number.  <b>Count forward and backward from any number in ones, tens and hundreds (above zero)</b>  Count in multiples of 2 to 9, 25, 50, 100 and 1000.	Use negative numbers in context and calculate intervals across zero.  Read numbers to 10 000 000  <b>Count forward and backward from any number in powers of 10</b>
Representing		Identify, represent and estimate numbers <b>to 100</b> using different	Identify, represent and estimate numbers <b>to 10 000</b> using different	Identify, represent and estimate numbers <b>to 10 000 000</b> using different

	To select the correct numeral to represent up to 10 (then 20) objects, then to write and recognise numbers to 20	representations, including the number line.  Read and write numbers initially from 1 to 20 and then to at least 100 in numerals and in words.	representations, including the number line.  <b>Write numbers to 10 000</b>  Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	representations, including the number line.  Write numbers to 10 000 000  Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
Solving Problems		Use place value and number facts to solve problems.	Solve number and practical problems with increasingly large positive numbers.	Solve number and practical problems.
<b>2. Addition and subtraction</b>				
<b>Mental addition and subtraction and number facts</b>	<b>Begin to know number bonds to 5 and 10</b>  <i>Add and subtract two single-digit numbers by counting on and back to find an answer using objects (ELG)</i>	Represent and use number bonds and related subtraction facts within 20.  Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.	Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.  Add and subtract numbers mentally, including: <ul style="list-style-type: none"> <li>• A three-digit number and ones.</li> <li>• A three-digit number and tens.</li> <li>• A three-digit number and hundreds.</li> </ul>	Add and subtract numbers mentally with increasingly large numbers.  Add and subtract negative integers mentally
Written addition and subtraction		Add and subtract numbers using concrete objects,	Add and subtract numbers with up to 4 digits using the	Add and subtract whole numbers with more than 4

		<p>pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>• One-digit and two-digit numbers to 20, including zero.</li> <li>• A two-digit number and ones.</li> <li>• A two-digit number and tens.</li> <li>• Two two-digit numbers.</li> <li>• Adding three one-digit numbers.</li> </ul>	<p>formal written methods of columnar addition and subtraction where appropriate.</p>	<p>digits, including using formal written methods. (columnar addition and subtraction)</p>
<p>Understand the relationship between addition and subtraction</p>	<p>Use the vocabulary of addition and subtraction in practical activities and discussion</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>Understand the symbols +, - and =</p>	<p>Estimate and use inverse operations to check answers to a calculation.</p>	<p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>
<p>Solve problems involving addition and subtraction</p>	<p><i>Begin to solve one-step problems (ELG)</i> with addition and subtraction with support</p>	<p>Solve one-step problems with addition and subtraction using concrete objects and pictorial representations including those involving numbers, quantities and measures using the addition (+), subtraction (-) and equals (=) signs.</p>	<p>Solve two-step addition and subtraction problems in contexts, deciding which operations and methods to use and why.</p>	<p>Solve multi-step addition and subtraction problems in contexts, deciding which operations and methods to use and why.</p>



		them using the multiplication ( $\cdot$ ), division ( $\div$ ) and equals ( $=$ ) signs.	number using formal written layout.  <i>Use jottings to partition larger numbers to divide</i>	formal written method of long multiplication.  Divide numbers up to 4 digits by a one- or two-digit whole number using the formal written methods of short and long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
Understand the relationship between multiplication and division		Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.  Use known multiplication facts to check the accuracy of calculations.	Recognise and use the inverse relationship between multiplication and division and use this to check calculations and solve missing number problems.	Estimate and use inverse operations and rounding to check answers to a calculation.
Solve problems involving multiplication and division	<i>Solve problems practically including doubling, halving and sharing (ELG)</i>	Solve one-step problems involving multiplication and division using concrete objects, pictorial representations and arrays or mental methods	Solve problems involving multiplying including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems (such as $n$ objects are connected to $m$ objects).  <i>Solve problems involving division</i>	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.  Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.  Solve problems involving multiplication and division including using knowledge of

				factors and multiples, squares and cubes.  Use knowledge of the order of operations to carry out calculations involving the four operations.
<b>4. Fractions (including decimals, percentages, ratio and proportion)</b>				
Recognising fractions		<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 quarter as one of four equal parts of an object, shape or quantity.</p> <p>Recognise, find, name and write fractions <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity.</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>Compare and order unit fractions and fractions with the same denominators.</p>	<p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number.</p> <p>Compare and order fractions whose denominators are all multiples of the same number. Compare and order fractions, including fractions <math>&gt; 1</math>.</p>
Equivalence		Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .	Recognise and show, using diagrams, families of common equivalent fractions.	<p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</p> <p>Use common factors to simplify fractions; use common multiples to express</p>

				fractions in the same denomination.
Calculating and solving problems with fractions		Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ .	<p>Add and subtract fractions with the same denominator</p> <p>Calculate quantities and fractions to divide quantities (including non-unit fractions where the answer is a whole number).</p> <p>Solve problems involving increasingly harder fractions.</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 numbers by whole numbers, supported <i>initially</i> by materials and diagrams.</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>Solve problems which require knowing percentage and decimal equivalents of, <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25.</p>
Decimals			Compare numbers with the same number of decimal	Identify the value of each digit in numbers given to three decimal places.

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			<p>places up to two decimal places.</p> <p>Count up and down in tenths and hundredths; recognise that tenths (or hundredths) arise from dividing an object into 10 (or 100) equal parts and in dividing one-digit numbers or quantities by 10 (or 100).</p> <p>Round decimals with one decimal place to the nearest whole number.</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths.          Recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>.</p>	<p>Read, write, order and compare numbers with up to three decimal places.</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place.</p> <p>Read and write decimal numbers as fractions.</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</p> <p>Associate a fraction with division and calculate decimal fraction equivalents.</p> <p>Solve problems which require knowing percentage and decimal equivalents of, <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25.</p>
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Percentages				<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>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p> <p><b>Calculate percentages of amounts</b></p>
Ratio and proportion				<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>
5. Shape & Space				
<p>Properties of 2d shapes</p>	<p>Begin to use mathematical names for 2d shapes and describe them</p> <p><i>Explore characteristics of everyday objects and shapes and use mathematical language to describe them (ELG)</i></p> <p>Show awareness of similarities of shapes in the environment</p>	<p>Recognise and name common 2D shapes.</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>Compare and sort common 2-D shapes and everyday objects.</p>	<p>Draw 2-D shapes</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>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p> <p>Compare and classify geometric shapes, including quadrilaterals and triangles,</p>	<p>Draw 2-D shapes using given dimensions and angles.</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</p> <p>Compare and classify geometric shapes based on their properties and sizes</p>

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			based on their properties and sizes.	
3d shapes	<p>Begin to use mathematical names for 3d shapes and describe them</p> <p><i>Explore characteristics of everyday objects and shapes and use mathematical language to describe them (ELG)</i></p> <p>Show awareness of similarities of shapes in the environment</p>	<p>Recognise and name common 3D shapes.</p> <p>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Identify 2-D shapes on the surface of 3-D shapes.</p> <p>Compare and sort common 3-D shapes and everyday objects.</p>	<p>Recognise 3-D shapes in different orientations and describe them.</p> <p>Make 3-D shapes using modelling materials</p> <p>Compare and classify geometric shapes, based on their properties and sizes</p>	<p>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.</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</p>
Angles		<p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</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>Recognise angles as a property of shape or a description of a turn/amount of rotation</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 whether angles are greater than or less than a right angle.</p> <p>Identify acute and obtuse angles and compare and order angles up to two right angles by size.</p>	<p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>Angles at a point and one whole turn (total 360°).</li> <li>Angles at a point on a straight line and a half turn (total 180°).</li> <li>Other multiples of 90°.</li> </ul> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically</p>

				<p>opposite and find missing angles.</p> <p>Find unknown angles in any triangles, quadrilaterals, and regular polygons.</p> <p>Draw given angles, and measure them in degrees (°).</p>
Position and direction, including co-ordinates	<p><i>Recognise, create and describe patterns (ELG)</i></p> <p>Describe their relative position, such as 'behind' or 'next to'</p>	<p>Order and arrange combinations of mathematical objects in patterns and sequences.</p> <p>Use mathematical vocabulary to describe position</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>Describe positions on the full coordinate grid. (all four quadrants)</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>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>
6. Measures				
Money	<p><i>Use everyday language to talk about money and to compare and solve problems (ELG)</i></p>	<p>Recognise and know the value of different denominations of coins and notes.</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>Add and subtract amounts of money to give change. (£ and p)</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence.</p>	<p>Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</p> <p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p>
Time	<i>To use everyday language to talk about time and to compare and solve problems (ELG)</i>	<p>Sequence events in chronological order using language.</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>Compare and sequence intervals of time.</p> <p>Tell the time to the hour and half past the hour and draw</p>	<p>Compare durations of events.</p> <p>Tell and write the time from an analogue clock, including using Roman numerals from I</p>	

		<p>the hands on a clock face to show these times.</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>Compare, describe and solve practical problems for time</p> <p>Measure and begin to record time (hours, minutes, seconds)</p>	<p>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 appropriate vocabulary.</p> <p>Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>	<p>Solve problems involving converting between units of time.</p> <p>Complete, read and interpret information in tables, including timetables</p>
Length, mass, capacity	<p><i>Use everyday language to talk about size, weight, capacity, distance and to compare quantities and objects and solve problems (ELG)</i></p> <p>Order two to three items by length or height and two items by weight or capacity</p>	<p>Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>lengths and heights.</li> <li>mass/weight.</li> <li>capacity and volume.</li> </ul> <p>Measure and begin to record:</p> <ul style="list-style-type: none"> <li>lengths and heights.</li> <li>mass/weight.</li> <li>capacity and volume.</li> </ul>	<p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</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 places.</p>

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		<p>Choose and use appropriate standard units to estimate and measure length/height (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, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math>.</p>	<p>Convert between different units of measure. (for example, kilometre to metre; hour to minute)</p>	<p>Convert between different units of metric measure.</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints, including converting between miles and kilometres.</p> <p>Estimate volume and capacity.</p> <p>Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</p> <p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p>
Area, perimeter and volume			<p>Measure the perimeter of simple 2-D shapes.</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.</p>	<p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</p>

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			Find the area of rectilinear shapes by counting squares.	<p>Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes.</p> <p>Calculate the area of parallelograms and triangles.</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>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units.</p>
<b>7. Statistics</b>				
Presenting and interpreting data	Record, using marks that they can interpret and explain	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	<p>Interpret and present data using bar charts, pictograms and tables.</p> <p>Interpret and present discrete and continuous data using appropriate graphical</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>

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		<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>methods, including bar charts and time graphs.</p> <p>Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts, pictograms and tables.</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>Calculate and interpret the mean as an average.</p>
<b>8. Algebra</b>				
Working with unknowns	Recognise, create, describe <b>and extend</b> patterns	Solve addition and subtraction problems involving missing numbers.	Solve addition and subtraction, multiplication and division problems that involve missing numbers.	<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 two variables.</p> <p>Use simple formulae.</p> <p>Generate and describe linear number sequences.</p>