



# Maths Progression of Skills Map

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(Progression of skills follows the Early Learning Goals and the NCETM)

## Place Value

1	2	3	4	5	6
count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number			count backwards through zero to include negative numbers	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context, and calculate intervals across zero
count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100;	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
given a number, identify one more and one less	find 10 more or less than a given number	find 100 more or less than a given number	find 1000 more or less than a given number		
use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use <, > and = signs	compare and order numbers up to 1000	order and compare numbers beyond 1000	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1000 in numerals and in words  <i>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 units, tenths and hundredths</i>		read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit  <i>identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places</i>
			round any number to the nearest 10, 100 or 1 000  <i>round decimals with one decimal place to the nearest whole number</i>	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 <i>round decimals with two decimal places to the nearest whole number and to one decimal place</i>	round any whole number to a required degree of accuracy <i>solve problems which require answers to be rounded to specified degrees of accuracy</i>
	use place value and number facts to solve problems involving up to 2 digit numbers	solve number problems and practical problems involving up to 3 digit numbers	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above (including positive integers up to 1 000 000, decimals up to 2 decimal places and negative numbers)	solve number and practical problems that involve all of the above

## Number: Addition and Subtraction

EYFS	Age banding	Skills
<b>Early Years</b>	<b>Birth to 3</b>	<ul style="list-style-type: none"> <li>- Combine objects like stacking blocks and cups. Put objects inside others and take them out again.</li> <li>- Take part in finger rhymes with numbers.</li> <li>- React to changes of amount in a group of up to three items.</li> <li>- Compare amounts, saying 'lots', 'more' or 'same'.</li> <li>- Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence</li> <li>- Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.'</li> </ul>
	<b>3 – 4 years</b>	<ul style="list-style-type: none"> <li>- Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</li> <li>- Recite numbers past 5.</li> <li>- Say one number for each item in order: 1,2,3,4,5.</li> <li>- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').</li> <li>- Show 'finger numbers' up to 5.</li> <li>- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</li> <li>- Experiment with their own symbols and marks as well as numerals.</li> <li>- Solve real world mathematical problems with numbers up to 5.</li> <li>- Compare quantities using language: 'more than', 'fewer than'.</li> <li>- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'</li> </ul>
	<b>4 – 5 years</b>	<ul style="list-style-type: none"> <li>- Count objects, actions and sounds</li> <li>- Subitise</li> <li>- Link the number symbol (numeral) with its cardinal number value.</li> <li>- Count beyond ten.</li> <li>- Compare numbers</li> <li>- Understand the 'one more than/one less than' relationship between consecutive numbers.</li> <li>- Explore the composition of numbers to 10.</li> <li>- Automatically recall number bonds for numbers 0-5 and some to 10.</li> </ul>
	<b>ELGs</b>	<ul style="list-style-type: none"> <li>• Children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number</li> <li>• Using quantities and objects they add and subtract two single-digit numbers and count on or back to find the answer</li> <li>• They solve problems, including doubling, halving and sharing</li> <li>* Children estimate a number of objects and check quantities by counting up to 20.</li> <li>* They solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups</li> </ul>

**Number bonds**

1	2	3	4	5	6
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				

**Mental Calculations**

add and subtract one-digit and two-digit numbers to 20, including zero	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	add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds		add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				use their knowledge of the order of operations to carry out calculations involving the four operations

**Written Calculations**

read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
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**Inverse operations, Estimating and Checking Answers**

	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
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## Problem Solving

1	2	3	4	5	6
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
	<i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</i>				Solve problems involving addition, subtraction, multiplication and division

## Number: Multiplication and Division

1	2	3	4	5	6
	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to $12 \times 12$		
			recognise and use factor pairs and commutativity in mental calculations	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 factors and composite (non-prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19	identify common factors, common multiples and prime numbers  use their knowledge of the order of operations to carry out calculations involving the four operations

				recognise and use square numbers and cube numbers, and the notation for squared ( $^2$ ) and cubed ( $^3$ )	<i>calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (<math>cm^3</math>) and cubic metres (<math>m^3</math>), and extending to other units such as <math>mm^3</math> and <math>km^3</math></i>
<b>Mental Calculations</b>					
	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers  recognise and use factor pairs and commutativity in mental calculations	multiply and divide numbers mentally drawing upon known facts  multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	perform mental calculations, including with mixed operations and large numbers  <i>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>)</i>
<b>Written Calculations</b>					
	calculate mathematical statements for multiplication and division within the multiplication tables for 2, 5 and 10 (introducing 3 times table near Term 6) and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals (=) signs	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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  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	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication  divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context  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

## Problem Solving

1	2	3	4	5	6
<p>solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher</p>	<p>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</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>solve problems involving multiplying and adding, 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</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>solve problems involving addition, subtraction, multiplication and division</p> <p>solve problems involving similar shapes where the scale factor is known or can be found</p>

## Number: Fractions and Decimals

1	2	3	4	5	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 quarter as one of four equal parts of an object, shape or quantity</p> <p>understand that a fraction is an <b>equal part of a whole</b></p>	<p>Pupils should count in fractions up to 10, starting from any number and using the <math>\frac{1}{2}</math> and <math>\frac{2}{4}</math> equivalence on the number line (Non Statutory Guidance)</p> <p>recognise, find, name and write fractions <math>\frac{1}{3}</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 that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. Count up and down in tenths</p> <p>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p>	<p>recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</p>	<p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p>	
		<p>compare and order unit fractions, and fractions with the same denominators</p>	<p>compare numbers with the same number of decimal places up to two decimal places</p>	<p>compare and order fractions whose denominators are all multiples of the same number</p> <p>read, write, order and compare numbers with up to three decimal places</p>	<p>compare and order fractions, including fractions <math>&gt;1</math></p> <p>identify the value of each digit in numbers given to three decimal places</p>

### Rounding

			round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
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### Equivalence (Fractions, Decimals, Percentages)

	write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .	recognise and show, using diagrams, equivalent fractions with small denominators	<p>recognise and show, using diagrams, families of common equivalent fractions</p> <p>recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>recognise and write decimal equivalents to <math>\frac{1}{4}</math>; <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math></p>	<p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>read and write decimal numbers as fractions (e.g. <math>0.71 = \frac{71}{100}</math>)</p> <p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</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 as a decimal fraction</p>	<p>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>)</p> <p>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p>
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### Addition and Subtraction

1	2	3	4	5	6
		add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ )	add and subtract fractions with the same denominator	<p>add and subtract fractions with the same denominator and multiples of the same number</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 (e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math>)</p>	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions



**Multiplication and Division**

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

multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

multiply one-digit numbers with up to two decimal places by whole numbers

multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places

identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places

associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g.  $\frac{3}{8}$ )

use written division methods in cases where the answer has up to two decimal places

multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g.  $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ )

multiply one-digit numbers with up to two decimal places by whole numbers

divide proper fractions by whole numbers (e.g.  $\frac{1}{3} \div 2 = \frac{1}{6}$ )

**Problem Solving**

solve problems that involve all of the above

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

solve simple measure and money problems involving fractions and decimals to two decimal places.

solve problems involving numbers up to three decimal places

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 with a denominator of a multiple of 10 or 25.

## EYFS Development Matters (shape, pattern, measurement link)

YR Group	Age banding	Skills
<b>Early Years</b>	<b>Birth to 3</b>	<ul style="list-style-type: none"> <li>• Climb and squeeze themselves into different types of spaces.</li> <li>• Build with a range of resources.</li> <li>• Complete inset puzzles.</li> <li>• Compare sizes, weights etc. using gesture and language - 'bigger/ little/smaller', 'high/low', 'tall', 'heavy'.</li> <li>• Notice patterns and arrange things in patterns</li> </ul>
	<b>3 – 4 years</b>	<ul style="list-style-type: none"> <li>• 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'.</li> <li>• Understand position through words alone – for example, "The bag is under the table," – with no pointing.</li> <li>• Describe a familiar route.</li> <li>• Discuss routes and locations, using words like 'in front of' and 'behind'.</li> <li>• Make comparisons between objects relating to size, length, weight and capacity.</li> <li>• Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.</li> <li>• Combine shapes to make new ones – an arch, a bigger triangle etc.</li> <li>• Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.</li> <li>• Extend and create ABAB patterns – stick, leaf, stick, leaf.</li> <li>• Notice and correct an error in a repeating pattern.</li> </ul>
	<b>4 – 5 years</b>	<ul style="list-style-type: none"> <li>• Select, rotate and manipulate shapes to develop spatial reasoning skills.</li> <li>• Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.</li> <li>• Continue, copy and create repeating patterns.</li> <li>• Compare length, weight and capacity</li> </ul>
	<b>ELGs</b>	<ul style="list-style-type: none"> <li>• Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems</li> <li>• They recognise, create and describe patterns</li> <li>• They explore characteristics of everyday objects and shapes and use mathematical language to describe them</li> <li>• * Children estimate, measure, weigh and compare and order objects and talk about properties, positions and time</li> </ul>

# Geometry

1	2	3	4	5	6
<b>Property of Shapes</b>					
recognise and name common 2-D and 3-D shapes, including: <ul style="list-style-type: none"> <li>* 2-D shapes [e.g. rectangles (including squares), circles and triangles]</li> <li>* 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].</li> </ul>	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line  identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces  identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]		identify lines of symmetry in 2-D shapes presented in different orientations	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets  illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
		draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	complete a simple symmetric figure with respect to a specific line of symmetry	draw given angles, and measure them in degrees ( $^{\circ}$ )	draw 2-D shapes using given dimensions and angles
	compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	-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	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
		-recognise angles as a property of shape or a description of a turn -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 -identify horizontal and vertical lines and pairs of perpendicular and parallel lines	identify acute and obtuse angles and compare and order angles up to two right angles by size	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles  identify: <ul style="list-style-type: none"> <li>* angles at a point and one whole turn (total <math>360^{\circ}</math>)</li> <li>* angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^{\circ}</math>)</li> <li>* other multiples of <math>90^{\circ}</math></li> </ul>	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

## Position, Direction and Movement

<p>describe position, direction and movement, including 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>order and arrange combinations of mathematical objects in patterns and sequences</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>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>describe positions on the full coordinate grid (all four quadrants)</p> <p>draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>
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## Measurement

1	2	3	4	5	6
Time					
<p>compare, describe and solve practical problems for time [e.g. quicker, slower, earlier, later]</p> <p>sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>measure and begin to record <b>time</b> (hours, minutes, seconds)</p> <p>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <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 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 durations of events, for example to calculate the time taken by particular events or tasks</p> <p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight</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>know the number of seconds in a minute and the number of days in each month, year and leap year</p>	<p>read, write and convert time between analogue and digital 12 and 24-hour clocks</p> <p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</p>	<p>solve problems involving converting between units of time</p>	

## Money

<p>recognise and know the value of different denominations of <b>coins and notes</b></p>	<p>recognise and use symbols for pounds (<b>£</b>) and pence (<b>p</b>); combine amounts to make a particular value</p> <p>find different combinations of coins that equal the same amounts of money</p> <p><b>solve simple problems</b> in a practical context involving addition and subtraction of money of the same unit, including giving change</p>	<p>add and subtract amounts of <b>money</b> to give change, using both £ and p in practical contexts</p>	<p>estimate, compare and calculate <b>different measures</b>, including <b>money in pounds and pence</b></p>		
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## Length, Mass, Volume

<p>compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>* lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]</li> <li>* mass/weight [e.g. heavy/light, heavier than, lighter than]</li> <li>* capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]</li> </ul> <p>measure and begin to record the following:</p> <ul style="list-style-type: none"> <li>* <b>lengths and heights</b></li> <li>* <b>mass/weight</b></li> <li>* <b>capacity and volume</b></li> </ul>	<p>compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</p> <p>choose and use appropriate standard units to estimate and measure <b>length/height</b> in any direction (m/cm); <b>mass</b> (kg/g); <b>temperature</b> (°C); <b>capacity</b> (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p>	<p>measure, compare, add and subtract: <b>lengths</b> (m/cm/mm); <b>mass</b> (kg/g); <b>volume/capacity</b> (l/ml)</p>		<p>use all four operations to solve problems involving measure (e.g. <b>length, mass, volume, money</b>) using decimal notation including scaling.</p> <p>estimate volume (e.g. using 1 cm<sup>3</sup> blocks to build cubes and cuboids) and capacity (e.g. using water)</p> <p>understand and use equivalences between metric units and common imperial units such as inches, pounds and pints</p>	<p>solve problems involving the calculation and conversion of <b>units of measure</b>, using decimal notation up to three decimal places where appropriate</p> <p>convert between miles and kilometres</p>
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### Shape

		measure the <b>perimeter</b> of simple 2-D shapes	measure and calculate the <b>perimeter</b> of a rectilinear figure (including squares) in centimetres and metres  find the area of rectilinear shapes by counting squares	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm <sup>2</sup> ) and square metres (m <sup>2</sup> ) and estimate the area of irregular shapes  measure and calculate the <b>perimeter</b> of composite rectilinear shapes in centimetres and metres	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm <sup>3</sup> ) and cubic metres (m <sup>3</sup> ), and extending to other units such as mm <sup>3</sup> and km <sup>3</sup> . recognise that shapes with the same areas can have different <b>perimeters</b> and vice versa  calculate the area of parallelograms and triangles  recognise when it is possible to use formulae for area and volume of shapes
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### Statistics

1	2	3	4	5	6
	interpret and construct simple pictograms, tally charts, block diagrams and simple tables  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	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use these to solve problems

		solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	solve comparison, sum and difference problems using information presented in a line graph	calculate and interpret the mean as an average
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Algebra					
1	2	3	4	5	6
solve one-step problems that involve addition and subtraction, that involve <b>missing number problems</b> such as $7 = \square - 9$	recognise and use the inverse relationship between addition and subtraction that involve <b>missing number problems</b> .	solve problems, including <b>missing number</b> problems, using number facts, place value, and more complex addition and subtraction.  solve problems, including <b>missing number</b> problems, involving multiplication and division, including integer scaling		use the properties of rectangles to deduce related facts and find <b>missing lengths and angles</b>	express missing number problems algebraically  find pairs of numbers that satisfy number sentences involving two unknowns  enumerate all possibilities of combinations of two variables
			Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit.		use simple formulae  recognise when it is possible to use <b>formulae</b> for area and volume of shapes
sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening	order and arrange combinations of mathematical objects in patterns				generate and describe linear number sequences