

# MATHS

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# Number & Place Value

COUNTING				
Year 2	Year 3	Year 4	Year 5	Year 6
		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 in steps of 2, 3, and 5 from 0, and in tens 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 1000 000	
	find 10 or 100 more or less than a given number	find 1000 more or less than a given number		

COMPARING NUMBERS				
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 <i>compare numbers with the same number of decimal places up to two decimal places (copied from Fractions)</i>	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)

IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS				
identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		

READING AND WRITING NUMBERS (including Roman Numerals)				
Year 2	Year 3	Year 4	Year 5	Year 6
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		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

			(appears also in Comparing Numbers)	(appears also in Understanding Place Value)
	<i>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied from Measurement)</i>	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.	read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	

UNDERSTANDING PLACE VALUE				
recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
		<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 (copied from Fractions)</i>	<i>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions)</i>	<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 (copied from Fractions)</i>

ROUNDING				
Year 2	Year 3	Year 4	Year 5	Year 6
		round any number to the nearest 10, 100 or 1 000	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000	round any whole number to a required degree of accuracy
		<i>round decimals with one decimal place to the nearest whole number (copied from Fractions)</i>	<i>round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions)</i>	<i>solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)</i>

PROBLEM SOLVING				
use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.	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	solve number and practical problems that involve all of the above

# Addition & Subtraction

NUMBER BONDS				
Year 2	Year 3	Year 4	Year 5	Year 6
recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100				

MENTAL CALCULATION				
add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> <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>	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	perform mental calculations, including with mixed operations and large numbers
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 METHODS				
Year 2	Year 3	Year 4	Year 5	Year 6
	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)	

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.

PROBLEM SOLVING				
Year 2	Year 3	Year 4	Year 5	Year 6
<p>solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> <li>* using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>* applying their increasing knowledge of mental and written methods</li> </ul>	<p>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</p>	<p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>	<p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>
<p><i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)</i></p>				<p>Solve problems involving addition, subtraction, multiplication and division</p>

## Multiplication & Division

MULTIPLICATION & DIVISION FACTS				
Year 2	Year 3	Year 4	Year 5	Year 6
<p><i>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)</i></p>	<p><i>count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)</i></p>	<p><i>count in multiples of 6, 7, 9, 25 and 1 000 (copied from Number and Place Value)</i></p>	<p><i>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)</i></p>	
<p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p>	<p>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p>	<p>recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></p>		

MENTAL CALCULATION				
	<p>write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using</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 three numbers</p>	<p>multiply and divide numbers mentally drawing upon known facts</p>	<p>perform mental calculations, including with mixed operations and large numbers</p>

	mental and progressing to formal written methods (appears also in Written Methods)			
show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	<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> (copied from Fractions)

WRITTEN CALCULATION				
Year 2	Year 3	Year 4	Year 5	Year 6
calculate mathematical statements for multiplication and division within the multiplication tables 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 (appears also in Mental 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	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 one-digit number using the formal written method of short division and interpret remainders appropriately for the context	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
				<i>use written division methods in cases where the answer has up to two decimal places</i> (copied from

				Fractions (including decimals))
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PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS				
Year 2	Year 3	Year 4	Year 5	Year 6
		recognise and use factor pairs and commutativity in mental calculations (repeated)	<p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19</p>	<p>identify common factors, common multiples and prime numbers</p> <p><i>use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions)</i></p>
			recognise and use square numbers and cube numbers, and the notation for squared ( <sup>2</sup> ) and cubed ( <sup>3</sup> )	<i>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> (copied from Measures)</i>

ORDER OF OPERATIONS				
Year 2	Year 3	Year 4	Year 5	Year 6
				use their knowledge of the order of operations to carry out calculations involving the four operations

INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS				
	<i>estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)</i>	<i>estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)</i>		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy



PROBLEM SOLVING				
Year 2	Year 3	Year 4	Year 5	Year 6
solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	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	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	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	solve problems involving addition, subtraction, multiplication and division
			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	<i>solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)</i>

## Fractions, Decimals & Percentages

COUNTING IN FRACTIONAL STEPS				
Year 2	Year 3	Year 4	Year 5	Year 6
<i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)</i>	count up and down in tenths	count up and down in hundredths		

RECOGNISING FRACTIONS				
recognise, find, name and write fractions $\frac{1}{3}$ , $\frac{1}{4}$ , $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	

	recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.			
	recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			

COMPARING FRACTIONS				
	compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1

COMPARING DECIMALS				
Year 2	Year 3	Year 4	Year 5	Year 6
		compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places

ROUNDING INCLUDING DECIMALS				
		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

EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND 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	recognise and show, using diagrams, families of common equivalent fractions	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
		recognise and write decimal equivalents of any number of	read and write decimal numbers as fractions (e.g. 0.71 = $\frac{71}{100}$ )	associate a fraction with division and

		tenths or hundredths	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$ )
		recognise and write decimal equivalents to $\frac{1}{4}$ ; $\frac{1}{2}$ ; $\frac{3}{4}$	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	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

ADDITION AND SUBTRACTION OF FRACTIONS				
Year 2	Year 3	Year 4	Year 5	Year 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	add and subtract fractions with the same denominator and multiples of the same number  recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements $> 1$ as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ )	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

MULTIPLICATION AND DIVISION OF FRACTIONS				
			multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	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. $\frac{1}{3} \div 2 = \frac{1}{6}$ )

MULTIPLICATION AND DIVISION OF DECIMALS				
Year 2	Year 3	Year 4	Year 5	Year 6
				multiply one-digit numbers with up to two decimal places by whole numbers
		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 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

PROBLEM SOLVING				
Year 2	Year 3	Year 4	Year 5	Year 6
	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 problems involving numbers up to three decimal places	
		solve simple measure and money problems involving fractions and decimals to two 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.	

## Ratio & Proportion

Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division				
				Year 6
				solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
				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.

## Algebra

EQUATIONS				
Year 2	Year 3	Year 4	Year 5	Year 6
<p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and <b>missing number</b> problems.</i> (copied from Addition and Subtraction)</p>	<p>solve problems, including <b>missing number</b> problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)</p>		<p><i>use the properties of rectangles to deduce related facts and find <b>missing lengths and angles</b></i> (copied from Geometry: Properties of Shapes)</p>	<p>express missing number problems algebraically</p>
	<p><i>solve problems, including <b>missing number</b> problems, involving multiplication and division, including integer scaling</i> (copied from Multiplication and Division)</p>			
<p><i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</i> (copied from Addition and Subtraction)</p>				<p>find pairs of numbers that satisfy number sentences involving two unknowns</p>
				<p>enumerate all possibilities of combinations of two variables</p>

FORMULAE				
Year 2	Year 3	Year 4	Year 5	Year 6
		<i>Perimeter can be expressed algebraically as <math>2(a + b)</math> where <math>a</math> and <math>b</math> are the dimensions in the same unit. (Copied from NSG measurement)</i>		use simple formulae
				<i>recognise when it is possible to use <b>formulae</b> for area and volume of shapes</i> (copied from Measurement)

SEQUENCES				
<i>compare and sequence intervals of time</i> (copied from Measurement)				generate and describe linear number sequences
<i>order and arrange combinations of mathematical objects in patterns</i> (copied from Geometry: position and direction)				

## Measurement

COMPARING AND ESTIMATING				
Year 2	Year 3	Year 4	Year 5	Year 6
compare and order lengths, mass, volume/capacity and record the results using $>$ , $<$ and $=$		estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	calculate and compare the area of squares and rectangles including using standard units, square centimetres ( $\text{cm}^2$ ) and square metres ( $\text{m}^2$ ) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using $1 \text{ cm}^3$ blocks to build cubes and cuboids) and capacity (e.g. using water)	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units such as $\text{mm}^3$ and $\text{km}^3$ .
compare and sequence intervals of time	compare durations of events, for example to calculate the time taken by particular events or tasks			
	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 (appears also in Telling the Time)			
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MEASURING and CALCULATING				
Year 2	Year 3	Year 4	Year 5	Year 6
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	measure, compare, add and subtract: <b>lengths</b> (m/cm/mm); <b>mass</b> (kg/g); <b>volume/capacity</b> (l/ml)	estimate, compare and calculate <b>different measures</b> , including <b>money in pounds and pence</b> (appears also in Comparing)	use all four operations to solve problems involving measure (e.g. <b>length, mass, volume, money</b> ) using decimal notation including scaling.	solve problems involving the calculation and conversion of <b>units of measure</b> , using decimal notation up to three decimal places where appropriate (appears also in Converting)
	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	measure and calculate the <b>perimeter</b> of composite rectilinear shapes in centimetres and metres	recognise that shapes with the same areas can have different <b>perimeters</b> and vice versa

MEASURING and CALCULATING				
Year 2	Year 3	Year 4	Year 5	Year 6
recognise and use symbols for pounds ( <b>£</b> ) and pence ( <b>p</b> ); combine amounts to make a particular value	add and subtract amounts of <b>money</b> to give change, using both £ and p in practical contexts			
find different combinations of coins that equal the same amounts of money				
<b>solve simple problems</b> in a practical context involving addition and subtraction of money of the same unit, including giving change				
		find the area of rectilinear shapes by	calculate and compare the area of squares and	calculate the area of parallelograms and triangles

		counting squares	<p>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</p> <p><i>recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</i> (copied from Multiplication and Division)</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 [e.g. mm<sup>3</sup> and km<sup>3</sup>].</p> <p>recognise when it is possible to use formulae for area and volume of shapes</p>
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TELLING THE TIME				
Year 2	Year 3	Year 4	Year 5	Year 6
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.	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)		
know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)	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 (appears also in Comparing and Estimating)			
			solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)	solve problems involving converting between units of time

CONVERTING				
Year 2	Year 3	Year 4	Year 5	Year 6
know the number of minutes in an hour and	know the number of seconds in a minute	convert between different units of	convert between different units of	use, read, write and convert between



the number of hours in a day. (appears also in Telling the Time)	and the number of days in each month, year and leap year	measure (e.g. kilometre to metre; hour to minute)	metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	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
		read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)	solve problems involving converting between units of time	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)
		solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	convert between miles and kilometres

IDENTIFYING SHAPES AND THEIR PROPERTIES				
Year 2	Year 3	Year 4	Year 5	Year 6
identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line		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 (appears also in Drawing and Constructing)
identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
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DRAWING AND CONSTRUCTING				
	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 (°)	draw 2-D shapes using given dimensions and angles
				recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)

COMPARING AND CLASSIFYING				
Year 2	Year 3	Year 4	Year 5	Year 6
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	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
			distinguish between regular and irregular polygons based on reasoning about equal sides and angles	

ANGLES				
	recognise angles as a property of shape or a description of a turn		know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
	identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a	identify acute and obtuse angles and compare and order angles up to two right angles by size	identify: * angles at a point and one whole turn (total 360°)	recognise angles where they meet at a point, are on a straight line, or are vertically opposite,

	complete turn; identify whether angles are greater than or less than a right angle		* angles at a point on a straight line and $\frac{1}{2}$ a turn (total $180^\circ$ ) * other multiples of $90^\circ$	and find missing angles
	identify horizontal and vertical lines and pairs of perpendicular and parallel lines			

## Position, Direction & Movement

POSITION, DIRECTION AND MOVEMENT				
Year 2	Year 3	Year 4	Year 5	Year 6
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)		describe positions on a 2-D grid as coordinates in the first quadrant	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	describe positions on the full coordinate grid (all four quadrants)
		describe movements between positions as translations of a given unit to the left/right and up/down		draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
		plot specified points and draw sides to complete a given polygon		

PATTERN				
order and arrange combinations of mathematical objects in patterns and sequences				

## Statistics

INTERPRETING, CONSTRUCTING AND PRESENTING DATA				
Year 2	Year 3	Year 4	Year 5	Year 6
interpret and construct simple pictograms, tally charts, block	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods,	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use

diagrams and simple tables		including bar charts and time graphs		these to solve problems
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				

SOLVING 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