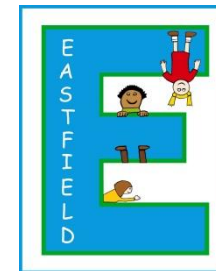


Knowledge and Skills Overview for Maths



Aims of National Curriculum:

- Become fluent in the fundamentals of maths.
- Reason mathematically.
- Solve problems by applying mathematics.

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Theme and Focus</u>	Autumn: Eastfield Blocks! Helping Hands Spring: Once upon a Time The Land Before Time Summer: In Our Back Garden What a Wonderful World!	Autumn: Home Sweet Home Spring: Out of this World Summer: Land Ahoy!	Autumn: Travelling Around Spring: London's Burning Summer: Wonder Women	Autumn: Meet the Flintstones Spring: Building An Empire Summer: Street Detectives	Autumn: Tomb Raiders Spring: Let the Battle Commence! Summer: A Large and Dirty Town	Autumn: Greece Lightning Spring: Conquering Castles Summer: Black by day and red by night	Autumn: Mexican Hats Spring: Nautical Know How Summer: The War at Home
<u>Key Skill</u>							
<u>Number: Number and Place Value</u>							
	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>

<p>Counting</p>	<p>Verbally count beyond 20, recognising the pattern of the counting system.</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <p>Count in multiples of twos, fives and tens.</p> <p>Given a number, identify one more and one less.</p>	<p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward.</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100.</p> <p>Find 10 or 100 more or less than a given number.</p>	<p>Count backwards through zero to include negative numbers.</p> <p>Count in multiples of 6, 7, 9, 25 and 1000.</p> <p>Find 1000 more or less than a given number.</p>	<p>Count forwards or backwards in steps of powers of 10 for any given number up to 1000 000.</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero.</p>	<p>Count forwards or backwards in a range of ways to 10 000 000.</p>
<p>Reading and Writing Numbers</p>	<p>Recognise numbers up to 20.</p> <p>Select the correct numeral to represent 1 to 10 objects.</p>	<p>Read and write numbers from 1 to 20 in numerals and words.</p> <p>Read and write numbers to 100 in numerals.</p>	<p>Read and write numbers to at least 100 in numerals and in words.</p>	<p>Read and write numbers up to 1000 in numerals and in words.</p>	<p>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.</p>	<p>Read, write numbers to at least 1 000 000.</p> <p>Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.</p> <p>Read and interpret negative numbers in <i>context</i>.</p>	<p>Read and write, numbers up to 10 000 000.</p>
<p>Understanding Place Value</p>	<p>Have a deep understanding of number to 10, including the composition of each number.</p>	<p>Identify and represent numbers using objects and pictorial representations including the number line.</p>	<p>Identify and represent 2-digit numbers including the number line.</p> <p>Recognise the place value of each digit in a two-digit number (tens, ones).</p>	<p>Identify and represent 3-digit numbers including the number line.</p> <p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p>	<p>Identify and represent 4-digit numbers using different representations (number lines, scales, graphs, place value grids).</p> <p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p>	<p>Recognise the place value of each digit in a numbers to at least 1 000 000.</p> <p><i>Identify the value of each digit to two decimal places.</i></p>	<p>Recognise the place value of each digit in a numbers up to 10 000 000.</p> <p>Use negative numbers in context, and calculate intervals across 0.</p>

Comparing Numbers	Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	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.	Order and compare numbers to at least 1,000,000.	Order and compare numbers up to 10,000,000.
Estimation	Estimate the number of objects seen (numbers to 10).	Estimate the number of objects seen (numbers to 20).	Estimate 2-digit numbers using different representations including a number line.	Estimate 3-digit numbers using different representations including a number line.	Estimate 4-digit numbers using different representations (number lines, scales, graphs, place value grids).		
Rounding					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.
Problem Solving	Explore and represent patterns within numbers to 10, including evens and odds, double facts and how quantities can be distributed equally.		Use place value and number facts to solve problems.	Solve number problems and practical problems using estimation and different representations.	Solve number and practical problems using multiples of 6, 7, 9, 25 and 1000, negative numbers and place value (involving increasingly large numbers).	Solve number problems and practical problems that involve all the above.	Solve number and practical problems that involve rounding, negative numbers, ordering and comparing values up to 10,000,000.

Number: Addition and Subtraction

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Bonds	Automatically recall, without reference to rhymes, counting or other aids:	Represent, memorise , use and reason with number bonds and related subtraction facts within 20.	Recall and use addition and subtraction acts to 20 fluently and derive and use related facts up to 100.				

	<ul style="list-style-type: none"> - number bonds to 5, including to subtraction facts - some number bonds to 10. 	Know the story of every number up to 20.					
Mental Calculation	<p>Add / subtract 2 single digit numbers using quantities and objects.</p> <p>Count on to add 2 numbers.</p> <p>Count back on a number track to subtract a number or take objects away.</p>	<p>Add and subtract one-digit and two-digit numbers to 20, including zero.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p>	<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> -a two-digit number and ones -a two-digit number and tens -two two-digit numbers -adding three one-digit numbers. <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</p>	<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> -a three-digit number and ones -a three-digit number and tens -a three-digit number and hundreds. 		<p>Add and subtract numbers mentally with increasingly large numbers.</p>	<p>Choose an effective method to add and subtract.</p> <p>Perform mental calculations, including with mixed operations and large numbers.</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p>
Written Methods		<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p>	.	<p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p>	<p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).</p>	<p>Choose an effective method to add and subtract.</p>
Inverse Operations, Estimating and Checking			<p>Recognise and use the inverse relationship between addition and subtraction and use this to check</p>	<p>Estimate the answer to a calculation and use inverse operations to check answers.</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>Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>

			calculations and solve missing number problems.				
Problem Solving	In practical activities and discussion, I can use vocabulary involved in adding and subtracting.	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations. Solve missing number problems.	Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures. Apply an increasing knowledge of mental and written methods when problem solving.	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. Solve problems involving addition, subtraction, multiplication and division.

Multiplication and Division

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
--	------------------	---------------	---------------	---------------	---------------	---------------	---------------

<p>Mental Calculation and Key Facts</p>	<p>Automatically recall, without reference to rhymes, counting or other aids, some double facts.</p>	<p>Recall doubles to 20. Know halves of even numbers to 20. Understand that it is possible to halve odd numbers but it is not impossible! <i>Count in multiples of twos, fives and tens.</i></p>	<p>Doubles and halves of numbers to 100. Count in steps of 2, 3, and 5 from 0, and in tens from any number. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. Know multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Recognise odd and even numbers.</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100. Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers. Double and halve numbers beyond 100.</p>	<p>Count in multiples of 6, 7, 9, 25 and 1000. Recall multiplication and division facts for multiplication tables up to 12 x 12 FLUENTLY. Recognise and use factor pairs and commutativity in mental calculations. 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>Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. Use the vocabulary of prime numbers, prime factors and composite numbers. Recall prime numbers to 19 and able to establish whether a number up to 100 is prime. Recognise and use square numbers and cube numbers and the correct notation. Multiply and divide numbers mentally drawing upon known facts. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. <i>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</i></p>	<p>Identify common factors, common multiples and prime numbers. Multiply and divide numbers by 10, 100 and 1000 giving answers to 3 decimal places. Multiply 1-digit numbers, with up to 2 decimal places, by whole numbers.</p>
<p>Written Calculation</p>			<p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs</p>	<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 formal written methods.</p>	<p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</p>	<p>Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. Divide numbers up to 4 digits by a one-digit number using short division and interpret</p>	<p>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.</p>

						remainders appropriately 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. Use their knowledge of the order of operations to carry out calculations involving the four operations.
Inverse Operations, Estimating and Checking			Solve missing number problems for the 2, 5 and 10x tables.	Solve missing number problems for the 3, 9 and 8x tables.	Solve missing number problems for all the times tables.		Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Problem Solving	Solve problems involving doubling / halving /sharing.	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.	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. Solve problems involving 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. Solve problems that involve 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 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 addition, subtraction, multiplication and division.

Number: Fractions (including decimals and percentages)

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Counting</u>			<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.		
<u>Recognise, read and write</u>		<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 $1/3$, $1/4$, $2/4$ and $3/4$ 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 a tenth is derived from dividing an object into 10 equal parts.</p> <p>Recognise and use fractions as numbers: units 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 write decimal equivalents.</p> <p>Recognise and show, using diagrams, families of common equivalent fractions.</p>	<p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</p> <p>Recognise and convert mixed numbers and improper fractions.</p> <p>Identify, name and write equivalent fractions of a given fraction represented visually.</p> <p>Read and write decimal numbers as fractions.</p> <p>Read, write decimal numbers up to three decimal places.</p> <p>Recognise the % symbol and understand that percent relates to 'number parts per hundred'.</p>	
<u>Comparing</u>				Compare and order unit fractions, and fractions with the same denominators.	Compare numbers with the same number of decimal places up to two decimal places.	Compare and order fractions whose denominators are all	Compare and order fractions, including fractions >1 .

						<p>multiples of the same number.</p> <p>Read, write, order and compare numbers with up to three decimal places.</p>	<p>Identify the value of each digit in numbers given to three decimal places.</p>
Rounding					<p>Round decimals with one decimal place to the nearest whole number.</p>	<p>Round decimals with two decimal places to the nearest whole number and to one decimal place.</p>	<p>Solve problems which require answers to be rounded to specified degrees of accuracy.</p>
Equivalence			<p>Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>Recognise and show, using diagrams, equivalent fractions with small denominators.</p>	<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 $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$</p>	<p>Write percentages as a fraction and as a decimal.</p> <p>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator or a multiple of 10 or 25.</p> <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 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. $\frac{3}{8}$).</p> <p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p>
Four Areas of Calculation				<p>Add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$).</p>	<p>Add and subtract fractions with the same denominator.</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the</p>	<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</p>	<p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fraction.</p> <p>Multiply and divide numbers by 10, 100 and</p>

					<p>answer as ones, tenths and hundredths.</p>	<p>write mathematical statements > 1 as a mixed number (e.g. $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$).</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p>	<p>1000 giving answers up to 3 decimal places.</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$).</p> <p>Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$).</p> <p>Multiply 1-digit numbers, with up to 2 decimal points, by whole numbers.</p> <p>Use written division methods in cases where the answer has up to 2 decimal places.</p>
Problem Solving				Solve problems that involve all the above.	<p>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>Solve problems involving numbers up to three decimal places.</p> <p>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.</p>	Solve problems which require answers to be rounded to specified degrees of accuracy.

Algebra

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
	Order/sequence familiar events.	Missing number problems such as $7 = \square - 9$ (Addition and Subtraction). Sequence events in chronological order. (Measurement)	Missing number problems. (Addition and Subtraction) Sequence intervals of time (Measurement).	Missing number problems, using number facts, place value, and more complex addition and subtraction. (Addition and Subtraction) Missing number problems, involving multiplication and division, including integer scaling. (Multiplication and Division)	Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit. (Measurement)	Use the properties of rectangles to deduce related facts and find missing lengths and angles. (Geometry: Properties of Shapes)	Express missing number problems algebraically. Find pairs of numbers that satisfy number sentences involving two unknowns. Enumerate all possibilities of combinations of two variables. Use simple formulae. Recognise when it is possible to use formulae for area and volume of shapes. (Measurement) Generate and describe linear number sequences.

Measurement

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Comparing and Estimating	Use everyday language to talk about and compare size, weight, capacity, position, distance, time, money and solve problems. Order/sequence familiar events.	Compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]	Compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$. Compare and sequence intervals of time.	Compare durations of events, for example to calculate the time taken by events or tasks. Estimate and read time with increasing accuracy to the nearest minute.	Estimate, compare and calculate different measures, including money in pounds and pence.	Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.	Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3 .

		<ul style="list-style-type: none"> * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later]. <p>Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].</p>		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.		Estimate volume (e.g. using 1 cm ³ blocks to build cubes and cuboids) and capacity (e.g. using water).	
Measuring and Calculating	<p>Order 2 or 3 items by length or height.</p> <p>Order 2 items by weight and capacity.</p> <p>Use everyday language to talk about and compare size, weight, capacity, position, distance, time, money and solve problems. language related to money.</p>	<p>Measure and begin to record the following:</p> <ul style="list-style-type: none"> * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds). <p>Recognise and know the value of different denominations of coins and notes.</p>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>Find different combinations of coins that equal the same amounts of money.</p>	<p>Measure, compare, add and subtract lengths (m/cm/mm.); mass (kg/g); volume/capacity (l/ml).</p> <p>Measure the perimeter of simple 2-D shapes.</p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p>	<p>estimate, compare and calculate different measures, including money in pounds and pence.</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.</p> <p>Find the area of rectilinear shapes by counting squares.</p>	<p>Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</p> <p>Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.</p>	<p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p> <p>Recognise that shapes with the same areas can have different perimeters and vice versa.</p> <p>Calculate the area of parallelograms and triangles.</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³)</p>

			Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.				and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3]. Recognise when it is possible to use formulae for area and volume of shapes.
<u>Telling the Time</u>	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Recognise and use language relating to dates, including days of the week, weeks, months and years.	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. Know the number of minutes in an hour and the number of hours in a day.	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight.	Read, write and convert time between analogue and digital 12 and 24-hour clocks. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	Solve problems involving converting between units of time.		
<u>Converting</u>		Know the number of minutes in an hour and the number of hours in a day.	Know the number of seconds in a minute and the number of days in each month, year and leap year.	Convert between different units of measure (e.g. kilometres to metres; hours to minutes). Read, write and convert time between analogue and digital 12 and 24-hour clocks	Convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).	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.	

					Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	Solve problems involving converting between units of time. Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Convert between miles and kilometres.
--	--	--	--	--	----------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Geometry: Properties of Shapes

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Identifying Shapes and their Properties	Use mathematical names for 2D and 3D shapes. Explore everyday shapes and use some mathematical terms to describe and select shapes.	Recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	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].	Recognise 3-D shapes in different orientations and describe them.	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.
Drawing and Constructing				Draw 2-D shapes and make 3-D shapes using modelling materials.	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
							Recognise, describe and build simple 3-D shapes, including making nets.

Comparing and Classifying			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.
Angles		Describe position, direction and movement including whole, half, quarter and three-quarter turns. Understand the term clockwise and relate this to a clock face.	Distinguish between rotation as a turn and in term of right angles for quarter, half and three – quarter turns.	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: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and \square a turn (total 180°) * other multiples of 90°	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Geometry: Position and Direction

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Position, Direction and Movement	Positional Language - behind, next to, in front.	Describe position, direction and movement including whole, half, quarter and three-quarter turns.	Use mathematical vocabulary to describe position, direction and movement including movement in a straight line.		Describe positions on a 2-D grid as coordinates in the first quadrant. Describe movements between positions as	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that	Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the

		Understand the term clockwise and relate this to a clock face. .	Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).		translations of a given unit to the left/right and up/down. Plot specified points and draw sides to complete a given polygon.	the shape has not changed.	coordinate plane and reflect them in the axes.
Pattern	Recognise, create and describe patterns.		Order and arrange combinations of mathematical objects in patterns and sequences.				

Statistics

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Interpreting, Constructing and Presenting Data			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.
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.

Ratio and Proportion							

Year 6 is the only year group that is taught Ratio and Proportion. The skills are outlined below:

Solve problems involving the relative sizes of 2 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.