Bricknell Primary School

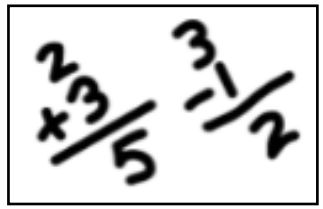
Maths Medium Term Plan

Key Concepts :

- Number and Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions, Decimals and Percentages
- Geometry
- Statistics
- Shape
- Measures

Second Order Concepts : These can be used across all aspects of a subject to organise the substantiative knowledge taught.

- Arithmetic Skills
- Fluency
- Application
- Reasoning and Problem Solving



As Mathematicians in Nursery, we will learn …..

Nursery Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children begin subitising using numbers up to 3. Children match numerals to amounts. Children show finger numbers up to 3. Children use the cardinal principle up to 3. Children touch count up to 3. Children recite numbers up to 3.	Children subitise numbers up to 4. Children touch count numbers up to 4. Children show fingers up to 4. Children recite numbers up to 4. Children recognise numerals up to 4. Children use the cardinal principle up to 4. Children use numicon to aid their understanding of numbers up to 4. Children compare amount using numbers up to 4.	Children subitise numbers up to 5. Children match numerals to an amount. Children touch count numbers up to 10. Children recite numbers up to 10. Children are introduced to the one ness of one, the two ness of two and the three ness of three.
Addition and Subtraction	Children continue subitising numbers up to 3. Children learn how to sort into 2 groups using colour, size and objects. Children then sort into 3 groups using colour, size and objects.	Children subitise using numbers up to 4. Children arrange up to 4 objects. Children begin to learn how to use the part whole model verbally. Children combine two groups to find a whole. Children learn how to sort two objects in different ways.	Children subitise using numbers up to 5. Children use the cardinal principle with numbers up to 5. Children recite numbers up to 10. Children touch count accurately up to 5.
Measurement	Children compare size, height, length and colour. Children describe a sequence of events.		
Geometry : Shape and Space and Exploring Patterns		Children discuss the properties of 2D and 3D shapes. Children begin to understand positional language.	Children identify and describe patterns. Children make a pattern trajectory. Children continue to make and copy patterns as well as spotting errors.

			Children are introduced to repetition.

As Mathematicians in EYFS, we will learn …..

EYFS Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children begin using numbers and counting up to 5. Children compare quantities of identical objects and non identical objects.	Children begin using numbers and counting up to 10. Children compare groups of objects and numbers up to 10.	Children are introduced to doubling, halving and sharing numbers and objects within numerical patterns. Children learn which numbers are odd and which numbers are even as well as understanding why.
Addition and Subtraction	Children begin learning how to sort objects into 2 groups. Children find one more and one less. Children find changes within 5.	Children combine two groups to find the whole amount. Children are introduced to the part whole model and learning how to use it with numbers up to 10.	Children learn how to add by counting on. Children learn how to take away by counting back.
Measurement	Children learn about their day and when events occur.		Children are introduced to length, height, distance, weight, volume and capacity using numbers, objects and practical exploration.
Geometry : Shape and Space and Exploring Patterns		Children begin to understand spatial awareness. Children are introduced to 2D shapes and 3D shapes learning their names and recognising them.	Children begin making simple patterns then once confident, explore more complex patterns.

As Mathematicians in Year 1, we will learn …..

Year 1 Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children count to ten and twenty, forwards and backwards, beginning with 0 or 1, or from any given number. Children count, read and write numbers to 10 and 20 in numerals and words. Children identify and represent numbers using objects and pictorial representations including the number line, and use the language of ; equal to, more than, less than (fewer), most and least. Children will be given a number and identify one more or one less. Children count in multiples of twos, fives and tens.	Children count to 50 forwards and backwards, beginning with 0 or 1, or from any number. Children count, read and write numbers from 1—50 in numerals and words. Children identify and represent numbers using objects and pictorial representations. Children will be given a number and identify one more and one less.	Children count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Children count, read and write numbers from 1—100 in numerals. Children identify and represent numbers using objects and pictorial representations including the number line, and use the language of ; equal to, more than, less than, most and least. Children will be given a number and identify one more and one less. Recognise odd and even numbers.
Addition and Subtraction	Children represent and use number bonds and related subtraction facts within 10. Children add and subtract one digit numbers, (to 20), including zero. Children read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Children solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and	Children represent and use number bonds and related subtraction facts within 20. Children add and subtract one digit numbers, (to 20), including zero. Children read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Children solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and	

	missing number problems such as 7= ? – 9.	missing number problems such as 7= ? – 9.	
Multiplication and Division			Children count in multiples of twos, fives and tens. Children 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.
Fractions			Children recognise, find and name a half as one of two equal parts of an object, shape or quantity. Children recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
Geometry : Position and Direction			Children describe position, direction and movement, including whole, half, quarter and three quarter turns.
Shape	Children recognise and name common 2D and 3D shapes including rectangles, squares, circles and triangles, cuboids, pyramids and spheres.		
Measurement : Money			Children recognise and know the value of different denominations of coins and notes.
Measurement : Time			Children 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.

			Compare, describe and solve practical problems for time, e.g. quicker, slower, earlier, later. Measure and begin to record time (hours, minutes, seconds). Sequence events in chronological order using language, e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.
Measurement : Length and Height		Children compare, describe and solve practical problems for lengths and heights. For example, long/ short, longer/shorter, tall/short and double/half. Children measure and begin to record lengths and heights.	
Measurement : Weight and Volume		Children compare, describe and solve practical problems for Mass/Weight. For example , heavy/light, heavier than, lighter than]; Capacity and Volume, for example, full/empty, more than, less than, half, half full and quarter. Children measure and begin to record mass/weight, capacity and volume.	

As Mathematicians in Year 2, we will learn …..

Year 2 Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward. Children recognise the place value of each digit in a two digit number (tens, ones). Children identify, represent and estimate numbers to 100 using different representations including the number line. Children compare and order numbers from 0 up to 100; use <, > and = signs. Children read and write numbers to at least 100 in numerals and words. Children partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus. Children use place value and number facts to solve problems.		
Addition and Subtraction	Children recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100. Children show that the addition of two numbers can be done in any order, (commutative), and subtraction of one number from another cannot.		

	Children 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 and adding three one digit numbers. Children add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17). Children recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships. Children recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Children 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.		
Multiplication and Division	Children recall and use multiplication and division facts for the 2, 5 and 10 times tables including recognising odd and even numbers.	Children recall and use multiplication and division facts for the 2, 5 and 10 times tables including recognising odd and even numbers.	

	Children calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign. Children solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. Children show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	Children calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign. Children solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. Children show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	
Fractions		Children recognise, find, name and write fractions 1/2, 1/3 , 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity. Children write simple fractions for example, ½ of 6 = 3. Children identify 1/4, 1/3 , 1/2 , 2/4, 3/4, of a number or shape, and know that all parts must be equal parts of the whole. Children recognise the equivalence of two quarters and one half.	
Geometry : Position and Direction			Children 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 anticlockwise). Children order and arrange combinations of mathematical objects.
Statistics		Children interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Children ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Children ask and answer questions about totaling and comparing categorical data.	
Shape		Children identify and describe the properties of 2D shapes including the number of sides and line symmetry in a vertical line. Children identify and describe the properties of 3D shapes including the number of edges, vertices and faces. Children describe similarities and differences of 2-D and 3-D shapes, using their properties. Children identify 2D shapes on the surface of 3D shapes, e.g. a circle on a cylinder and a triangle on a pyramid. Children compare and sort common 2D and 3D shapes and everyday objects.	

		Children order and arrange combinations of mathematical objects in patterns and sequences.	
Measurement : Money	Children recognise and use symbols of pounds, (£) and pence, (p) and combine amounts to make a particular value. Children find different combinations of coins that equal the same amounts of money. Children solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.		
Measurement : Time			Children 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. Children know the number of minutes in an hour and the number of hours in a day. Children compare and sequence intervals of time.
Measurement : Length and Mass			Children choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) and mass (kg/ g) to the nearest appropriate unit, using rulers and scales. Children compare and order length and mass and record the results using >, < and =. Children read scales in divisions of twos, fives and tens.

			Children read scales where not all numbers on the scale are given and estimate points in between.
Measurement : Capacity, Volume and Temperature			Children choose and use appropriate standard units to estimate and measure capacity (litres/ml) and temperature (°C) to the nearest appropriate unit, using thermometers and measuring vessels. Children compare and order volume/capacity and record the results using >, < and =.

As Mathematicians in Year 3, we will learn …..

Year 3 Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. Children recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning. Children compare and order numbers to 1000. Children reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. Children counts in multiples of 2, 3, 4, 5, 6, 8, 10, 50 and 100. Children identify, represent and estimate numbers using different representations. Children find 10 or 100 more or less than a given number. Children read and write numbers up to 1000 in numerals and in words. Children solve number problems and practical problems involving these ideas.		

Addition and Subtraction	Children add and subtracts mentally 3 digits, one, tens and hundreds. Children apply place value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: 80 + 60 = 140. Children add, subtract and give change in practical contexts such as calculating change from £1. Children add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Children add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. Children estimate the answer to a calculation and use inverse operations to check answers. Children solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.		
Multiplication and Division	Children recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	Children recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Children count from 0 in multiples of 4, 8, 50 and 100. Children write and calculate mathematical statements for multiplication and division using the multiplication tables they know,	

		including for two -digit numbers times one-digit numbers, using mental and progressing to formal written methods. Children 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 objectives.	
Fractions		Children recognise, find and write fractions of a discrete set of objects, unit fractions and non-unit fractions with small denominators. Children count up and down in tenths. Children recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. Children recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	Children add and subtract fractions with the same denominator within one whole. Children recognise and show, using diagrams, equivalent fractions with small denominators. Children compare and order unit fractions, and fractions with the same denominators.
Geometry : Angles			Children recognise angles as a property of shape or a description of a turn. Children identify right angles, recognise that two right angles make a half-term, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.

			Children identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
Statistics		Children interpret and present data using bar charts, pictograms and tables. Children solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables.	
Shape			Children draw 2-D shapes and make 3- D shapes using modelling materials. Children recognise 3-D shapes in different orientations and describe them.
Measurement : Length and Perimeter		Children measure, compare, add and subtract lengths, (m/cm/mm). Children solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. Children continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed and simple equivalents of mixed units. Children measure the perimeter of simple 2D shapes.	
Measurement : Time			Children tell and write the time from an analogue clock including using

			Roman Numerals from I to XII and 12-hour and 24-hour clocks. Children estimate and read time with increasing accuracy to the nearest minute. Children record and compare time in terms of seconds, minutes and hours. Children use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. Children know the number of seconds in a minute and the number of days in each month, year and leap year. Children compare durations of events, e.g. to calculate the time taken by particular events or tasks.
Measurement : Mass and Capacity			Children measure, compare, add and subtract mass, (kg/g), volume and capacity, (l/ml). Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. Children continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed and simple equivalents of mixed units.
Measurement : Money		Children solve simple measure and money problems involving fractions and decimals to two decimal places. Children estimate, compare and calculate different measures,	

		including money in pounds and pence. Children add and subtract amounts of money to give change, using both £ and p in practical contexts.	

As Mathematicians in Year 4, we will learn …..

Year 4 Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. Children reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. Children know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. Children count in multiples of 6, 7, 9. 25 and 1000. Children find 1000 more or less than a given number. Children count backwards through zero to include negative numbers. Children recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones). Children order and compare numbers beyond 1000.		

	Children identify, represent and estimate numbers using different representations. Children round any number to the nearest 10, 100 or 1000. Children solve number and practical problems that involve all of the above and with increasingly large positive numbers. Children 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.		
Addition and Subtraction	Children add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Children estimate and use inverse operations to check answers to a calculation. Children solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.		
Multiplication and Division	Children recall and use multiplication and division facts for multiplication tables x3, x4 and x8. Children recall and use multiplication and division facts for multiplication tables up to 12 × 12. Children count in multiples of 6, 7, 9, 25 and 1000.	Children recall and use multiplication and division facts for multiplication tables up to 12 × 12. Children use place value, known and derived facts to multiply and divide mentally, including, multiplying by 0 and 1, dividing by 1 and multiplying together three numbers.	

	Children use place value, known and derived facts to multiply and divide mentally, including, multiplying by 0 and 1, dividing by 1 and multiplying together three numbers. Children multiply and divide whole numbers by 10 and 100. Children 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. Children recognise and use factor pairs and commutativity in mental calculations.	Children recognise and use factor pairs and commutativity in mental calculations. Children multiply two digit and three digit numbers by a one digit number using formal written layout. Children divide two and three digit numbers by a 1 digit number using short division. Children divide two and three digit numbers by a one digit number using an informal method and interpret remainders. Children 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.	
Fractions		Children recognise and show, using diagrams, families of common equivalent fractions. Children count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Children 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. Children add and subtract fractions with the same denominator.	

Decimals		Children recognise and write decimal equivalents of any number of tenths or hundredths. Children recognise and write decimal equivalents to ¼, ½, ¾. Children find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Children round decimals with one decimal place to the nearest whole number. Children count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Children compare numbers with the same number of decimal places up to two decimal places. Children recognise and write decimal equivalents to 1/4, 1/2 and 3/4. Children find the effect of dividing a one or two digit number by 10 or 100,identifying the value of the digits in the answer as ones, tenths and hundredth.
Geometry : Angles			Children identify acute and obtuse angles and compare and order angles up to two right angles by size.
Geometry : Position and Direction			Children describe positions on a 2D grid as coordinates in the first quadrant. Children describe movements between positions as translations of a given unit to the left/ right and up/ down.
Statistics			Children interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Children solve comparison, sum and difference problems using

			information presented in bar charts, pictograms, tables and other graphs.
Shape			Children compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Children identify lines of symmetry in 2D shapes presented in different orientations. Children complete an simple symmetric figure with respect to a specific line of symmetry. Children plot specified points and draw sides to complete a given polygon. Children distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Measurement : Length and Perimeter	Children convert between different units of measure, e.g. kilometer to meter. Children measure and calculate the perimeter of a rectilinear figure, including squares, in cm and m.		
Measurement : Area		Children find the area of rectilinear shapes by counting squares.	
Measurement : Money			Children solve simple measure and money problems involving fractions and decimals to two decimal places. Children estimate, compare and calculate different measures, including money in pounds and pence.

Measurement : Time	Children convert between different units of measure, e.g. hour to minute. Children read, write and convert time between analogue and digital 12 and 24 hour clocks. Children solve problems involving converting from hours to minutes, minutes to seconds, years to months and weeks to days.		

As Mathematicians in Year 5, we will learn …..

Year 5 Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. Children read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Children count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. Children interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. Children round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000. Children know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Children know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Children know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. Children recognise the place value of each digit in numbers with up to 2 decimal places.		

	Children reason about the location of any number with up to 2 decimals places. Children round to the nearest whole and tenth. Children apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). Children solve number problems and practical problems that involve all of the above.		
Addition and Subtraction	Children add and subtract numbers with up to 2 d.p. (4 digit whole numbers). Children add and subtract numbers mentally with increasingly large numbers. Children add and subtract whole numbers with more than 4 digits, including using formal written methods, (columnar addition and subtraction) Children use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Children solve addition and subtraction multi-step problems in contexts deciding which operations and methods to use and why.		
Multiplication and Division	Children multiply and divide numbers mentally drawing upon known facts.	Children multiply numbers up to 4 digits by a one or two digit number using a formal written method,	

	Children multiply and divide whole numbers up to 2dp by 10, 100 and 1000. Children multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size. Children identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Children find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors. Children recognise and use square numbers and cube numbers and the notation for squared (^{2}) and cubed (^{3}) Children know and use the vocabulary of prime numbers, prime factors and composite, (nonprime), numbers. Children establish whether a number up to 100 is prime and recall prime numbers up to 19.	including long multiplication for 2 digit numbers. Children multiply any whole number with up to 4 digits by any one-digit number using a formal written method. Children 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. Children solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. Children solve problems involving multiplication and division and a combination of these, including understanding the use of the equals sign.	
Fractions		Children compare and order fractions whose denominators are multiples of the same number. Children identify, name and write equivalent fractions of a given	

		fraction, represented visually including tenths and hundredths. Children recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number. Children add and subtract fractions with the same denominator and denominators that are multiples of the same number. Children multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Children read and write decimal numbers as fractions, for example 0.71 = 71/100. Children solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	
Decimals and Percentages		Children read, write, order and compare numbers with up to three decimal places. Children recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Children round decimals with two decimal places to the nearest whole number and to one decimal place. Children recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per	Children solve problems involving numbers up to three decimal places. Children multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

		hundred', and write percentages as a fraction with denominator 100, and as a decimal. Children solve problems which require knowing percentage and decimal equivalents of and those fractions with a denominator of a multiple of 10 or 25.	
Geometry : Position and Direction			Children 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.
Geometry : Angles			Children know angles are measured in degrees, estimate and compare acute, obtuse and reflex angles. Children draw given angles, and measure them in degrees (°). Children identify angles at a point and one whole turn, (total 360°), angles at a point on a straight line and ½ a turn, (total 180°) and other multiples of 90°.
Statistics	Children solve comparison, sum and difference problems using information presented in a line graph. Children complete, read and interpret information in tables including timetables.		
Shape			Children identify 3D shapes, including cubes and other cuboids, from 2D representations.

			Children use the properties of rectangles to deduce related facts and find missing lengths and angles. Children distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Measurement : Perimeter and Area	Children measure and calculate the perimeter of composite rectilinear shapes in cm and m. Children calculate and compare the area of rectangles, (including squares), and including using standard units, cm^2,m^2 estimate the area of irregular shapes.		
Measurement : Converting Units			Children use all four operations to solve problems involving measure. Children convert between different units of metric measure, (for example, km and m; cm and m; cm and mm; g and kg; l and ml). Children understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
Measurement : Volume			Children estimate volume, for example using $1cm^3$ blocks to build cuboids, including cubes, and capacity, for example, using water.
Measurement : Time			Children solve problems involving converting between units of time.

As Mathematicians in Year 6, we will learn …..

Year 6 Medium Term Plan

	Autumn Term	Spring Term	Summer Term
Number and Place Value	Children read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. Children round any whole number to a required degree of accuracy. Children use negative numbers in context, and calculate intervals across zero. Children solve number and practical problems that involve all of the above. Children demonstrate place value for large numbers and decimals.		
Addition and Subtraction	Children solve addition and subtraction multi step problems in contexts deciding which operations and methods to use and why. Children perform mental calculations, including with mixed operations and large numbers. Children use their knowledge of the order of operations to carry out calculations involving the four operations. Children solve problems involving addition and subtraction. Children use estimation to check answers to calculations and determine in the context of a		

	problem with an appropriate degree of accuracy.		
Multiplication and Division	Children multiply multi digit number up to 4 digits by a 2 digit number using the formal written method of long multiplication. Children divide numbers up to 4 digits by a 2 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. Children divide numbers up to 4 digits by a 2 digit number using the formal written method of short division, interpreting remainders according to context. Children perform mental calculations, including with mixed operations and large numbers. Children identify common factors, common multiples and prime numbers. Children use their knowledge of the order of operations to carry out calculations involving the four operations. Children solve problems involving multiplication and division. Children use estimation to check answers to calculations and determine in the context of a problem with an appropriate degree of accuracy.		

Fractions	Children use common factors to simplify fractions, use common multiples to express fractions in the same denomination. Children compare and order fractions including fractions > 1. Children generate and describe linear number sequences with fractions. Children add and subtract fractions with different denominations and mixed numbers using the concept of equivalent fractions. Children multiply simple pairs of proper fractions writing the answer in its simplest form, for example ¼ x ½ = 1/8. Children divide proper fractions by whole numbers, e.g. 1/3 ÷ 2 = 1/6. Children associate a fraction with division and calculate decimal fraction equivalents, for example 0.375 = 3/8. Children recall and use equivalences between simple fractions, decimals and percentages including in different contexts. Children calculate using decimals, fractions and percentages.		
Decimals and Percentages	Children identify the value of each digit in numbers given to three decimal places and multiply numbers by 10, 100 and 1000 giving answers up to 3dp.		

	Children multiply one digit numbers with up to 2dp by whole numbers. Children use written division methods in cases where the answer has up to two decimal places. Children solve problems which require answers to be rounded to specified degrees of accuracy. Children solve problems involving the calculation of percentages, for example, of measures and such as 15% of 360 and the use of percentages for comparison. Children recall and use equivalences between simple Fractions, Decimals and Percentages including in different contexts. Children calculate using decimals, fractions and percentages.		
Geometry : Position and Direction		Children describe positions on the full coordinate grid, all four quadrants. Children draw and translate simple shapes on the coordinate plane and reflect them in the axes.	
Geometry : Algebra		Children use simple formulae. Children generate and describe linear number sequences. Children express missing number problems algebraically. Children find pairs of numbers that satisfy an equation with two unknowns. Children enumerate possibilities of combinations of two variables.	

Geometry : Ratio		Children solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Children solve problems involving similar shapes where the scale factor is known or can be found. Children solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	
Statistics		Children interpret and construct pie charts and line graphs and use these to solve problems. Children calculate the mean as an average.	
Shape		Children illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Children draw 2D shapes using given dimensions and angles. Children compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. Children recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	
Measurement		Children solve problems involving the calculation and conversion of units of measure, using decimal	

		notation up to three decimal places where appropriate. Children 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 3dp. Children convert between imperial units and vice versa, e.g. miles and kilometers. Children recognise that shapes with the same areas can have different perimeters and vice versa. Children recognise when it is possible to use formulae for area and volume of shapes. Children calculate, estimate and compare volume of cubes and cuboids using standard units including cm3, m3 and extending to other units, (mm3, km3). Children calculate the area of parallelograms and triangles.	