Mathematics - Medium Term Plan

	Autumn		Spring		Summer	
Term:	**1**	**2**	**3**	**4**	**5**	**6**

Early Years	Learning objective	Success Criteria				Coverage	
Number	• Have a deep understanding of number to 10, including the composition of each number.	Counting: • I can show one-to-one correspondence and say one number name for each object. (Reception) • I can move or touch objects to count them. (Reception) • I can count things I can't touch or see, such as pictures or sounds. (Reception) • I know that, when objects are moved, spread out or moved closer together, the total remains the same. (Reception) • I know that the last number that I say represents the number of objects in the group. (Reception) • I can give someone a specified number of objects. (Reception) • I can count a specified number of objects from a larger group. (Reception) • I can make an estimate, such as choosing the group which has the closest to ten objects. (Reception) • I can count on when part of a set of objects is hidden. (Reception) Composition of number: • I can show an understanding of parts and wholes by gathering objects together and separating them into smaller groups. (Reception) • I can show that, when counting, the last number that I say is the number that the group contains. (Reception) • I can use concrete objects to find different combinations of three (for example, one and one and one, two and one, or three and zero), recognising that the total is still the same. (Reception) • I can show that numbers can be made up of two or more parts, using concrete objects. (Reception) • I can solve real world problems with numbers up to five, by exploring different compositions. (Reception) • I can understand the language of 'parts' and 'whole'. (Reception) • I understand that the 'whole' is made up of the 'parts'. (Reception) • I can say the 'hidden number' when I can see only part of a group of up to five objects. (Reception) • I can explore different compositions of numbers up to ten, using concrete resources. (Reception) • I can use visual models to explore different compositions to ten. (Reception) • I can see the two parts within a whole of up to ten pictures or objects. (Reception) • I can say the missing number from number bonds within ten, using concrete objects or fingers. (Reception) • I can use my knowledge of the composition of numbers in practical situations to solve problems. (Reception) Representing and recognising numerals: • I can distinguish numerals from letters. (Reception) • I can represent numbers using fingers, marks on paper or pictures. (Reception) • I can pick out a matching numeral to a numeral that is shown to me. (Reception) • I can recognise a numeral from 1 to 3 and find the matching number of objects. (Reception) • I can match some numerals to quantities above three. (Reception) • I can record amounts using marks and explain what they represent. (Reception) • I can recognise numerals 0 to 5, then 0 to 10, when they are places in order. (Reception) • I can recognise numerals 0 to 5, then 0 to 10, when placed out of order. (Reception) • I can read the numerals 0 to 0 on a number line. (Reception) • I can represent the numerals 0 to 5, then 0 to 10, correctly. (Reception) Addition and subtraction: • I know that numbers identify how many objects are in a set. (Reception) • I know that a group of things changes in quantity when something is taken away. (Reception) • I know that a group of things changes in quantity when something is taken away. (Reception) • I can compare sets of objects, saying how many fewer are in a set. (Reception) • I can compare sets of objects, sating which has more objects. (Reception) • I can compare sets of objects, saying how many more are in each set. (Reception) • I can say the number that is one more than a given number. (Reception) • I can subtract by counting a group of objects, counting out the number to remove, then recounting what is left.					

		(Reception)							
		• I can find the total number items in two groups by counting all of them. (Reception)							
		• I can select two groups of objects to make a given total of objects. (Reception)							
		• I can recognise the number of objects when counting. (Reception)							
		• I can find out the 'total' or 'how many altogether' after two sets have been combined. (Reception)							
		• I can represent numbers in different ways using equipment, such as five or ten-frames, part-whole models, number lines or stories. (Reception)							
		• I can understand the effect of subtracting zero. (Reception)							
		• I can understand the effect of adding zero. (Reception)							
		• I can understand the effect of subtracting the full amount. (Reception)							
		• I can count back to subtract. (Reception)							
		• I can count on to add. (Reception)							
		• I can use the vocabulary of equals: leaves, balances, same and total. (Reception)							
		• I can use the vocabulary of subtraction: take away, how many left, subtract and minus. (Reception)							
		• I can use the vocabulary of comparison in practical contexts: how many fewer? How much shorter/cheaper than? (Reception)							
		• I can use the vocabulary of addition: how many altogether, plus, more. (Reception)							
		• I can understand addition as an increase. (Reception)							
		• I can understand subtraction as a decrease. (Reception)							
	• Subitise (recognise quantities without counting) up to five.	• I can initially recognise groups of two, or possibly three, without the need to count. (Reception)							
		• I can make a small collection of up to three objects to match another collection of objects. (Reception)							
		• I can connect small quantities to number words, without the need to count. (Reception)							
		• I can select objects from a larger group by subitising. (Reception)							
		• I can identify if the group does or does not contain a certain amount, without counting. (Reception)							
		• I can quickly recognise up to three objects, and name the quantity, without having to count them individually. (Reception)							
		• I can show a number of fingers to five, all at once, without counting. (Reception)							
		• I can recognise small quantities in familiar patterns (up to 6 for a pattern on a die) without counting. (Reception)							
		• I can subitise two or more parts within a random arrangement of up to five objects, without counting. (Reception)							
		• I can subitise up to five, including regular and random arrangements, by seeing the parts and quickly knowing the whole. (Reception)							
		• I can subitise two or more parts within an arrangement of more than five objects. (Reception)							
		• I can subitise two or more parts within a larger group and instantly know the total. (Reception)							
		• I can subitise a quantity and describe a change, such as 'more' or 'less'. (Reception)							
	• Automatically recall (without reference to rhymes, counting or other aids) number bonds up to five (including subtraction facts) and some number bonds to ten, including double facts.	• I can use my understanding of number bonds to recall number bonds to give, including subtraction facts. (Reception)							
		• I can automatically recall all number bonds to five. (Reception)							
		• I can automatically recall some number bonds to ten. (Reception)							
		• I can automatically recall double facts up to double five. (Reception)							
		• I can understand the vocabulary of 'matching' and 'same' through picture matching or number shapes. (Reception)							
		• I can compare two groups of objects, saying when they have the same number. (Reception)							
		• I can recognise dice doubles when playing games, or spot pattern doubles on dominoes. (Reception)							
		• I can use the term 'double'. (Reception)							
		• I can recognise when a set of objects or pictures are not a double. (Reception)							
		• I can complete the second part of a double through mirroring activities. (Reception)							
		• I can make and explain my own doubles through practical activities. (Reception)							
		• I can use the language of doubling, such as 'two of the same', 'same again' and 'double'. (Reception)							
		• I can calculate doubles when working practically with concrete resources. (Reception)							
		• I can solve problems involving doubles. (Reception)							
		• I can recognise a double when it is not shown in a regular pattern. (Reception)							
		• I can create doubles in order, from one to five, and say what I notice. (Reception)							
Numerical Patterns	• Verbally count beyond 20, recognising the pattern of the counting system.	• I can say the number names in order in an unbroken string, forwards. (Reception)							
		• I can say the number names backwards in an unbroken string. (Reception)							
		• I know that the order of numbers is fixed and will not change. This is known as a stable order. (Reception)							
		• I can recognise the significance and value of zero. (Reception)							

		• I can say the number before or after a number, dropping back to one. (Reception) • I can stop and start in different places when counting forwards. (Reception) • I can stop and start in different places when counting backwards. (Reception) • I can count on and keep track of how many I have counted on. (Reception) • I can count back and keep track of how many I have counted back. (Reception) • I can see the recurring pattern in our number system and use this to help me to count higher. (Reception) • I can enunciate each number clearly. (Reception)						
	• Compare quantities of up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	• I can order objects, such as towers of bricks, by saying which is the largest and which is the smallest. (Reception) • I can order numerals 0 to 5. (Reception) • I can place consecutive numerals in order (initially with numbers from 0 to 10, then progressing to numbers 0 to 20). (Reception) • I can place consecutive numbers in order, starting from a number other than one. (Reception) • I can place non-consecutive numbers in order (initially with numbers 0 to 10, then progressing to numbers 0 to 20). (Reception) • I can place numbers in order from smallest to greatest and greatest to smallest. (Reception) • I can place numbers in order in a meaningful context, such as scores in a game. (Reception) • I can recognise when a group of objects is more than one. (Reception) • I can indicate which group of objects has 'more' objects. (Reception) • I can use number language, such as 'more' and 'a lot'. (Reception) • I can indicate which set of objects has more or which set has less. (Reception) • I can use number language such as 'less' or 'fewer'. (Reception) • I can indicate which group of objects has 'fewer' objects. (Reception) • I can recognise groups with one, two or three objects, and begin to make comparisons between quantities, using the language of 'more' and 'fewer'. (Reception) • I can match groups of objects with the same number. (Reception) • I know that the quantity of objects stays the same when they are spread out or moved closer together. (Reception) • I know that the objects will appear different if they are spread out or are different sizes. (Reception) • I can say the number that comes after a given number in the sequence one to five, progressing to numbers from one to ten. (Reception) • I can say the number that comes before a given number in the sequence one to five, progressing to numbers from one to ten. (Reception) • I can find one more than a number to five, progressing to numbers to ten. (Reception) • I can find one less than a number to five, progressing to numbers to ten. (Reception) • I can find one more and one less than a number to five, progressing to numbers to ten. (Reception)						
	• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	• I can identify numbers to ten that are odd or even, explaining my understanding using concrete resources. (Reception) • I can arrange small quantities into pairs and notice that some quantities will have an odd one left over with no partner. (Reception) • I can understand the concept of 'fair' and 'unfair' when objects or snacks are shared equally or unequally. (Reception) • I can share fairly through practical activities such as putting food on plates of sharing toys equally. (Reception) • I can use the vocabulary of sharing, such as 'equal groups', 'sharing fairy', 'sharing between', 'fair' and 'unfair'. (Reception) • I can compare groups of objects, saying when they have the same number. (Reception) • I can count the groups I have made and count how many objects are in each group. (Reception) • I know that the original quantity remains unchanged after it has been shared equally. (Reception) • I can solve simple problems that include sharing. (Reception)						

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Year 1	Learning objective	Success Criteria	Coverage					
Number and place value	• to count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	• I can count to and across 100 from 0 or 1 • I can count back from 100 and from across 100 • I can count on from any given number • I can count back from a given number						
	• to count, read and write numbers to 100 in numerals, count in different multiples including ones, twos, fives and tens	• I can read numbers up to 100 in numerals • I can write numbers up to 100 in numerals • I can count to 100 in ones • I can count to 100 in twos • I can count to 100 in fives • I can count to 100 in tens • I can tell you if a number is odd or even						
	• to identify one more and one less from a given number	• I can give one more than a given number • I can give one less than a given number						
	• to identify and represent numbers using concrete objects and pictorial representations including the number line and use the language of: equal to, more than, less than (fewer), most, least	• I can identify numbers using objects or pictures or on a number line • I can use 'equal to' correctly • I can use 'more than' correctly • I can use 'less than (fewer)' correctly • I can use 'most' correctly • I can use 'least' correctly						
	• to read and write numbers from 1-20 in numerals and words	• I can read numbers up to 20 in words • I can write numbers up to 20 in words						
Addition and subtraction	• to read, write and interpret mathematical statements involving addition (+), subtraction(-) and equals (=) signs	• I can read the + sign and know what it means • I can write the + sign and know what it means • I can read the - sign and know what it means • I can write the - sign and know what it means • I can read the = sign and know what it means • I can write the = sign and know what it means						
	• to represent and use number bonds and related subtraction facts within 20	• I have memorised the number bonds to 10 • I have memorised the number bonds to 20 • I can write or draw or select materials to show the number bonds to 20 • I can write or draw or select materials to show the subtraction facts to 20						
	• to add and subtract one-digit and two-digit numbers to 20 (9+9, 18-9), including zero	• I can add a one-digit to a two-digit numbers up to 20 • I can subtract a one digit number from a two-digit number up to 20 • I know what happens when I add 0 or take 0 away						
	• to solve simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -	• I can solve simple one-step problems using addition and subtraction • I can find the missing number in problems						
Multiplication and division	• to solve simple one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	• I can share small quantities • I can group small quantities • I can find simple fractions of objects • I can find simple fractions of numbers • I can find simple fractions of quantities • I can double numbers • I can talk to you about arrays and numbers patterns and counting in twos						

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		• I can talk to you about arrays and numbers patterns and counting in fives							
		• I can talk to you about arrays and numbers patterns and counting in tens							
Fractions	• to recognise , find and name a half as one of two equal parts of an object, shape or quantity • to recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	• I can find a half of an object • I can find a half of an shape • I can find a half of an quantity • I can find a quarter of an object • I can find a quarter of a shape • I can find a quarter of an quantity • I can make a whole by combining halves • I can make a whole by combining quarters • I can make a half by combining quarters							

Measures	• to compare, describe, and solve practical problems for:
	  - lengths and heights
	  - mass or weight
	  - capacity/volume
	  - time
		• I can compare
		  - lengths and heights
		  - mass or weight
		  - capacity/volume
		  - time
		• I can describe
		  - lengths and heights
		  - mass or weight
		  - capacity/volume
		  - time
		• I can solve practical problems for
		  - lengths and heights
		  - mass or weight
		  - capacity/volume
		  - time
		• I can tell the difference between standard and non-standard units I can tell the difference between standard and non-standard units							

	• to measure and begin to record the following:
	  - lengths and heights
	  - mass or weight
	  - capacity/volume
	  - time
		• I can measure
		  - lengths and heights
		  - mass or weight
		  - capacity/volume
		  - time
		• I can record
		  - lengths and heights
		  - mass or weight
		  - capacity/volume
		  - time
		• I can use a ruler and weighing scales							

	• to recognise and know the value of different denominations of coins and notes	• I can recognise different denominations of coins and notes • I can tell you how much coins and notes are worth							
	• to sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening	• I can use the language of time correctly							
	• to recognise and use language relating to dates, including days of the week, weeks, months and years	• I can recognise the days of the week • I can use the names of the days of the week correctly • I can recognise the months of the year • I can use the names of the months of the year correctly							
	• to tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	• I can tell the time to the hour • I can draw the hands on the clock face to the hour • I can tell the time to half past the hour							

		• I can draw the hands on the clock face to the half hour						

Geometry: properties of shapes	• to recognise and name common 2-D and 3-D shapes, e.g.:
	   - rectangles (including squares), circles and triangles
	   - cuboids (including cubes), pyramids and spheres
		• I can recognise a 2-D shape
		 • I can recognise a 3-D object
		 • I can name a 2-D shape
		 • I can name a 3-D object						

Geometry: Position, direction	• to describe position, directions and movements , including half, quarter and three-quarter turns	• I can describe the position of things or people • I can describe the direction something/one is moving in • I can make half turns in a clockwise direction • I can make quarter turns in a clockwise direction • I can make three-quarter turns in a clockwise direction						

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	Autumn		Spring		Summer	
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Year 2	Learning objective	Success Criteria	Coverage					
Number and place value	• to count in steps of 2, 3, and 5 from 0, and count in tens from any number forward or backward	• I can count in steps of 2 from any number from 0 to at least 100 and backwards • I can count in steps of 3 from any number from 0 to at least 100 and backwards • I can count in steps of 5 from any number from 0 to at least 100 and backwards • I can count in steps of 10 from any number from 0 to at least 100 and backwards • I can count in steps of 2 from any number from 0 to beyond 100 and backwards • I can count in steps of 3 from any number from 0 to beyond 100 and backwards • I can count in steps of 5 from any number from 0 to beyond 100 and backwards • I can count in steps of 10 from any number from 0 to beyond 100 and backwards • I can count in steps of 3 to help me find a third						
	• to recognise the place value of each digit in a two-digit number (tens and ones)	• I can recognise and tell you the value of each digit in a two-digit number • I know when 0 is being used as a placeholder						
	• to identify, represent and estimate numbers using different representations including the number line	• I can identify numbers represented in different ways • I can represent numbers in different ways • I can estimate amounts						
	• to compare and order numbers from 0 to 100; use <,> and = signs	• I can compare numbers 0 to 100 using < sign • I can compare numbers 0 to 100 using > sign • I can use = sign to show equality • I can order numbers 0 – 100						
	• to read and write numbers to at least 100 in numerals and in words	• I can read numbers to at least 100 written in numerals • I can read numbers to at least 100 written in words • I can write numbers to at least 100 written in numerals • I can write numbers to at least 100 written in words						
	• to use place value and number facts to solve problems	• I can partition two digit numbers in different ways (e.g. 23=20+3, 23= 10+13) • I can use my knowledge of numbers to reason with, discuss and solve problems						
Addition and subtraction	• to 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	• I can solve simple one-step problems with addition • I can solve simple one-step problems with subtraction • I understand that to 'sum' is to add • I understand that to 'find the difference' is to subtract						
	• to recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	• I can recall all the addition facts to 20 • I can recall all the subtraction facts to 20 • I can use all the addition facts to 20 to solve problems • I can use all the subtraction facts to 20 to solve problems • I can use all the addition facts to 20 to help me find addition facts to 100 • I can use all the subtraction facts to 20 to help me find subtraction facts to 100						
	• to add and subtract numbers using concrete objects, pictorial representations, and mentally , including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one digit numbers	• I can record using columns when adding • I can record using columns when subtracting • I can use objects to help me add • I can use objects to help me subtract • I can use pictures to help me add • I can use pictures to help me subtract • I can use mental strategies to help me add • I can use mental strategies to help me subtract						
	• to show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	• I know that I can add numbers in any order • I know that when I subtract I take the smaller number from the larger number						
	• to recognise and us the inverse relationship between addition and subtraction	• I can use the inverse to check whether my answer is correct						

	and use this to check calculations and missing number problems	• I can find the missing numbers using the inverse in number sentences: - ♠ + 6 = 10 10 − 6 = 4 - 6 + ♠ = 10 10 − 6 = 4 so ♠ = 4					
Multiplication and division	• to recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables, including recognising odd and even numbers	• I can recall all the multiplication facts to 12 x 2 • I can recall all the division facts to 24 ÷ 2 • I can recall all the multiplication facts to 12 x 5 • I can recall all the division facts to 60 ÷ 5 • I can recall all the multiplication facts to 12 x 10 • I can recall all the division facts to 120 ÷ 10 • I can recognise an even number • I can recognise an odd number					
	• to calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and the equals (=) sign	• I can use the 'x', ÷ and = signs when I record my calculation					
	• to show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	• I know that I can multiply two numbers in any order • I know that I must divide the bigger number by the smaller number					
	• to solve problems including multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	• I can divide by sharing • I can divide by equal grouping • I can find fractions of: - objects - numbers - quantities • I understand the connection between the 10 multiplication table and place value • I can solve problems involving multiplication and division using: - materials - arrays - repeated addition - mental strategies - multiplication facts - division facts					
Fractions	• to recognise, find, name and write fractions ⅓ ¼ 2/4, ¾ of a length, shape, set of objects or quantity	• I can recognise fractions ⅓ ¼ 2/4, ¾ of a length, shape, set of objects or quantity • I can find fractions ⅓ ¼ 2/4, ¾ of a length, shape, set of objects or quantity • I can name fractions ⅓ ¼ 2/4, ¾ of a length, shape, set of objects or quantity • I can write fractions ⅓ ¼ 2/4, ¾ of a length, shape, set of objects or quantity					
	• to write simple fractions e.g. ½ of 6 = 3 and recognise the equivalence of two quarters and one half	• I can write simple number sentences involving fractions • I know that two quarters are the same as one half (• I know that fractions are equal parts • I can count in fractions on a number line • I know that fractions can add up to more than one.					
Measures	• to 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 - measuring vessels	• I can choose an appropriate unit to measure • I can choose an appropriate unit to use to estimate • I can measure in metres • I can measure in centimetres • I can estimate in metres • I can estimate in centimetres • I can use a ruler, tape or measuring stick to measure to the nearest metre • I can use a ruler, tape or measuring stick to measure to the nearest centimetre • I can weigh in kilograms • I can weigh in grams • I can estimate how heavy something is in kilograms • I can estimate how heavy something is weigh in grams • I can read scales to the nearest kilogram/gram • I can measure how hot or cold something is in degrees Celsius (°C) using a thermometer • I can estimate how hot or cold something is					

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Category	Objective	"I can" statements						
		• I can read a thermometer to tell how hot/cold it is • I can measure how much liquid I have in litres • I can measure how much liquid I have in millilitres • I can estimate how much liquid I have in litres • I can estimate how much liquid I have in millilitres						
	• to compare and order lengths, mass, volume/capacity and record the results using >, < and =	• I can compare two or more objects of different lengths • I can compare two or more objects of different weights • I can compare two or more volumes of liquid • I can record the results using >, < and =						
	• to recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	• I can recognise symbols for pounds (£) and pence (p) • I can combine coins to make a given value						
	• to find different combinations of coins that equal the same value	• I can find different ways of making a given amount of money						
	• to solve simple problems in a practical context involving addition and subtraction of money	• I can add amounts of money • I can take away amounts of money (give change)						
	• to compare and sequence intervals of time	• I can say which interval of time is shorter or longer than another • I can sequence events that happen to me						
	• to 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.	• I can tell the time when it is a quarter past an hour • I can tell the time when it is on the hour • I can tell the time when it is half past and hour • I can tell the time accurately to five minutes • I can draw different times on a clock face given the time.						
	• to know the number of minutes in an hour and the number of hours in a day	• I know the number of minutes in an hour • I know the number of hours in a day						
Geometry: properties of shape	• to identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line	• I can identify 2-D shapes • I can describe 2-D shapes using their properties • I can count the sides of a 2-D shape • I can find the line of symmetry in 2-D shapes						
	• to identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	• I can identify 3-D shapes • I can describe 3-D shapes using their properties • I can count the edges of a 3-D shape • I can count the vertices of a 3-D shape • I can count the faces of a 3-D shape						
	• to identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid	• I can identify the 2-D shapes on the faces of the 3-D shape						
	• to compare and sort common 2-D and 3-D shapes and everyday objects.	• I can compare common 2-D shapes to everyday objects • I can compare common 3-D shapes to everyday objects						
Geometry position, direction	• to order and arrange combinations of mathematical objects in patterns	• I can order combinations of mathematical objects in patterns • I can arrange combinations of mathematical objects in patterns						
	• to use mathematical vocabulary to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise), and movement in a straight line.	• I can use mathematical vocabulary to describe position • I can use mathematical vocabulary to describe direction • I can use mathematical vocabulary to describe movement • I understand that a rotation is a turn • I know that a quarter turn is a right angle • I know that a half turn is two right angles • I know that a three quarter turn is three right angles • I know the difference between clockwise and anti-clockwise						
Statistics	• to interpret and construct simple pictograms, tally charts, block diagrams and simple tables	• I can interpret simple pictograms, tally charts, block diagrams and simple tables • I can construct simple pictograms, tally charts, block diagrams and simple tables						
	• to ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	• I can count objects and sort them • I can ask questions about simple pictograms, tally charts, block diagrams and simple tables • I can answer questions about simple pictograms, tally charts, block diagrams and simple tables						
	• to ask and answer questions about totaling and compare categorical data.	• I can ask questions about all of the data • I can ask questions about comparing categorical data						

		• I can answer questions about all of the data	
		• I can answer questions about comparing categorical data	

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Year 3	Learning objective	Success Criteria				Coverage					
Number and place value	• to count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number	• I can count on and back in multiples of 4 from zero • I can count on and back in multiples of 8 from zero • I can count on and back in multiples of 50 from zero • I can count on and back in multiples of 100 from zero • I can find 10 more or 10 less than any given number • I can find 100 more or 100 less than any given number					■	■	■	■	■	■
	• to recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	• I recognise the value of each digit in a 3digit number • I can partition a 3 digit number • I recognise that 0 is used as a place holder					■	■	■	■	■	■
	• to compare and order numbers up to 1000	• I can say whether a number is bigger or smaller than another • I can use the greater than and less than symbols • I can order numbers to 1000					■	■	■	■	■	■
	• to identify, represent and estimate numbers using different representations	• I can identify numbers represented in different ways • I can represent numbers in different ways • I can estimate amounts including measure					■	■	■	■	■	■
	• to read and write numbers to at least 1000 in numerals and in words	• I can read numbers to at least 1000 written in numerals • I can read numbers to at least 1000 written in words • I can write numbers to at least 1000 written in numerals • I can write numbers to at least 1000 written in words					■	■	■	■	■	■
	• to solve number problems and practical problems involving these ideas.	• I can partition 3 digit numbers in different ways to solve one and two step number problems • I can use a variety of representations to solve problems including measure • I can use my knowledge of place value of numbers up to and beyond 1000 to help me solve problems • I can use my knowledge of numbers to reason with, discuss and solve problems					■	■	■	■	■	■
Addition and subtraction	• to add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds	• I can add a single digit to a three digit number mentally • I can subtract a single digit from a three digit number mentally • I can add a tens number to a three digit number mentally • I can subtract a tens number from a three digit number mentally • I can add a hundreds number to a three digit number mentally • I can subtract a hundreds number from a three digit number mentally • I can estimate the answer to an addition calculation. • I can estimate the answer to a subtraction calculation. • I can estimate the answer to an addition and subtraction calculation. • I can use an addition calculation as an inverse to check an answer. • I can use a subtraction calculation as an inverse to check an answer. • I can use an addition or subtraction calculation as an inverse to check an answer.					■	■	■	■	■	■
	• to add and subtract numbers with up to three digits, using the formal written methods of columnar addition and subtraction	• I can add a two digit number to a three digit number using written column method • I can add a three digit number to a three digit number using written column method • I can subtraction a two digit number to a three digit number using written column method • I can subtraction a three digit number to a three digit number using written column method • I can use a column method of addition without carrying • I can use a column method of subtraction without exchanging • I can use a column method of addition including carrying across the tens boundary • I can use a column method of subtraction including exchanging from the tens • I can use a column method of addition including carrying across the hundreds boundary • I can use a column method of subtraction including exchanging from the hundreds					■	■	■	■	■	■
	• to estimate the answer to a calculation and use inverse operations to check	• I can estimate the answer to an addition calculation.					■	■	■	■	■	■

	answers	• I can estimate the answer to a subtraction calculation. • I can estimate the answer to an addition and subtraction calculation. • I can use an addition calculation as an inverse to check an answer. • I can use a subtraction calculation as an inverse to check an answer. • I can use an addition or subtraction calculation as an inverse to check an answer.						
	• to solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	• I can solve addition problems involving missing numbers using number facts. • I can solve subtraction problems involving missing numbers using number facts. • I can solve addition problems involving missing numbers using place value. • I can solve subtraction problems involving missing numbers using place value. • I can solve more complex addition problems. • I can solve more complex subtraction problems.						
Multiplication and division	• to recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	• I can recall all the multiplication facts to 12 x 3 • I can recall all of the division facts to 36 ÷ 3 • I can recall all of the multiplication facts to 12 x 4 • I can recall all of the division facts to 48 ÷ 4 • I can recall all of the division facts to 96 ÷ 8 • I can connect the 2, 4 and 8 times tables through doubling • I can recall all the multiplication facts to 12 x 3 • I can recall all the division facts to 36÷ 3 • I can recall all the multiplication facts to 12 x 4 • I can recall all the division facts to 48 ÷ 4 • I can recall all the multiplication facts to 12 x 8 • I can recall all the division facts to 96 ÷ 8						
	• to 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	• I can write a number sentence using x and = (2, 3, 4, 5, 8 and 10) • I can write a number sentence using ÷ and = (2, 3, 4, 5, 8 and 10) • I can calculate the answer to a multiplication sentence (2, 3, 4, 5, 8 and 10) • I can calculate the answer to a division sentence (2, 3, 4, 5, 8 and 10) • I can mentally calculate 2 digit x 1 digit statements using my tables facts • I can use an informal written method to calculate 2 digit x 1 digit statements (grid multiplication and chunking) • I can use a formal written method to calculate 2 digit x 1 digit statements (e.g. short multiplication and division) • I can write a multiplication number sentence and work out the related multiplication and division sentences • I can use mental then formal written methods when multiplying a one digit number by a two digit number. • I can use mental then formal written methods when dividing a one digit number by a two digit number.						
	• to solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects	• I know whether to use multiplication or division to solve a problem • I can solve problems involving multiplication • I can solve problems involving division • I can find the missing number in a multiplication problem • I can find the missing number in a division problem • I can find the nth multiple of a number • I can work out intervals on a scale using my times table facts • I can use my multiplication and related division facts to solve problems involving objects (e.g. 12 sweets shared between 4 friends, 4 cakes shared equally between 8 children) • I can use my multiplication and related division facts to solve problems involving measures (e.g. 4 times as high, 8 times as long, etc) • I can solve missing number problems, involving inverse operations • I can solve word problems involving scaling of whole numbers. eg 4 times as high as a 4 m wall. • I can solve correspondence problems in which n objects are connected to m objects. eg 12 cakes shared equally between 4 children.						
Fractions	• to count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	• I can recognise when an object/shape is divided into 10 equal parts and that each part/section is 1 tenth. • I can count forwards/backwards in tenths, including crossing the boundary from decimals to integer mixed numbers. • I understand the connection between the fraction and decimal representations of tenths. • I understand that tenths are the result of 1 digit numbers or quantities divided by 10. • I can apply my understanding of tenths to all contexts, e.g. number, measure etc. for example 2mm is equivalent to 2 tenths of a centimetre.						

	Objective	I can statement						
	• to recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	• I can correctly use the terms numerator and denominator. • I can recognise, find and write a tenth of a given number (unit fraction). • I can recognise, find and write fractions for several tenths of a given number (non-unit fraction).						
	• to recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	• I can answer a problem expressing my answer as a fraction, e.g. If a man has 4 apples, 4 oranges, 4 pears and 4 bananas, what fraction/how much of the fruit are apples.						
	• to recognise and show, using diagrams, equivalent fractions with small denominators	• I can show/recognise equivalence between fractions and decimals, e.g. 5/10 = ½ = 0.2						
	• to add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)	• I understand that the denominator represents the total numbers of the parts in 1 whole. • I understand that the numerator shows how many parts of the whole are represented. • I can add fractions with small, identical denominators, that total up to one whole. • I can subtract fractions with small, identical denominators, that total up to one whole.						
	• to compare and order unit fractions with the same denominator	• I can compare and order fractions or decimals (tenths, quarters and eighths) • I can order and place decimals, fractions and whole numbers on a number line.						
	• to solve problems that involve all of the above	• I can think of a strategy to solve problems						
Measures	• to measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	• I can compare two or more lengths • I can compare two or more masses • I can compare two or more capacities • I can measure in mm, cm, and m • I can measure in g and kg • I can measure in l and ml • I can add two or more lengths • I can add two or more masses • I can add two or more capacities • I can subtract two or more lengths • I can subtract two or more masses • I can subtract two or more capacities • I can scale simple measures • I know simple equivalents of length, mass and capacity						
	• to measure the perimeter of simple 2-D shapes	• I can measure the perimeter of a simple 2D shape • I know how to find the perimeter						
	• to add and subtract amounts of money to give change, using both £ and p in practical contexts	• I can use the £ and p symbol • I can add amounts of money, including mixed units • I can subtract amounts of money to give change • I can recognise the value of coins						
	• to tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	• I can identify 1 minute intervals on a clock face. • I can tell the time to the nearest minute using an analogue clock. • I can recognise and read Roman Numerals (1 – 12). • I can tell the time using a clock with Roman Numerals. • I can say the time using a 12 hour clock. • I can write the time using a 12 hour clock. • I can say the time using a 24 hour clock. • I can write the time using a 24 hour clock.						
	• to 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	• I can read the time to the nearest minute. • I can estimate time to the nearest minute. • I can write the time in terms of; seconds, minutes, hours and o'clock. • I can work out the difference and compare time e.g. seconds, minutes, hours and o'clock. • I can use the vocabulary of time correctly (a.m. and p.m., morning, afternoon, noon and midnight)						
	• to know the number of seconds in a minute and the number of days in each month, year and leap year	• I know there are 60 seconds in a minute. • I know the number of days in each month. • I know the number of days in a year and a leap year.						
	• to compare durations of events, for example to calculate the time taken by particular events or tasks.	• I can compare the duration of events e.g. T.V listings, bus schedules and journey times						

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Geometry: properties of shapes	• to draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them	• I can draw 2-D shapes • I can describe the properties of 2D shapes using accurate language including lengths of lines and angles • I can make 3D shapes using modelling materials • I can recognise 3D shapes in different orientations • I can describe the properties of 3D shapes using accurate language including lengths of lines and angles • I can describe 3D shapes from different orientations • I can identify whether polygons and polyhedra have lines of symmetry						
	• to recognise angles as a property of shape or a description of a turn • to 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	• I can recognise angles as a property of a shape • I can recognise angles as a description of a turn • I can identify right angles • I can recognise that 2 right angles make a half turn • I can recognise that 3 right angles make 3 quarters of a turn • I can recognise that 4 right angles make a complete turn • I can identify whether angles are greater than a right angle • I can identify whether angles are less than a right angle						
	• to identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.	• I can identify horizontal and vertical lines in relation to other lines • I can identify parallel lines in relation to other lines • I can identify perpendicular lines in relation to other lines						
Statistics	• to interpret and present data using bar charts, pictograms and tables	• I can measure straight lines to the nearest centimetre • I can connect decimals and rounding when drawing straight lines						
	• to solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.	• I can solve one step questions using information presented in a scaled bar chart. • I can solve one step questions using information presented in a pictograms. • I can solve one step questions using information presented in a table. • I can solve two step questions using information presented in a scaled bar chart. • I can solve two step questions using information presented in a pictograms. • I can solve two step questions using information presented in a table. • I can interpret data presented in many contexts.						

Mathematics - Medium Term Plan

	Autumn		Spring		Summer	
Term:	1	2	3	4	5	6

Year 4	Learning objective	Success Criteria				Coverage				

Number and place value	• to count in multiples of 6, 7, 9, 25 and 1000	• I can count in multiples of 6, 7, 9, 25 and 1000 • I know the related multiplication and division facts up to 12 x12 • I know the inverse facts of these multiples.								
	• to find 1000 more or less than a given number	• I can find 1000 more than any number • I can find 1000 less than any number								
	• to count backwards through zero to include negative numbers	• I can count backwards through zero into negative numbers								
	• to recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	• I recognise the value of each digit in a 4 digit number • I can partition a 4 digit number • I understand that 0 is used as a place holder								
	• to order and compare numbers beyond 1000	• I can order and compare numbers in context e.g. temperature, measures and money								
	• to identify, represent and estimate numbers using different representations	• I can identify numbers represented in different ways • I can represent numbers in different ways • I can estimate amounts including measure • I can extend knowledge of the number system to include decimal numbers and fractions • I can estimate and round numbers to the use of measurement instruments								
	• to round any number to the nearest 10, 100 or 1000	• I can round numbers to 10, 100 or 1000 in context • I can tell you what these numbers mean and the reason for rounding up or down to the nearest 10,100or 1000 • I can apply rounding in helping me solve worded problems or mathematical investigations.								
	• to solve number and practical problems that involve all of the above and with increasingly large positive numbers	• I can use 4 digit numbers in different ways to solve one and two step number problems, through the use of column method. • I can use a variety of representations to solve problems including fractions and measure. • I can use my knowledge of place value of numbers beyond 1000 to help me solve problems • I can use my knowledge of numbers, fractions and decimals to reason with, discuss and solve problems								
	• to read Roman numerals to 100 (I to C) and know how, over time, the numeral system changed to include the concept of zero and place value.	• I can read Roman numerals to 100 (I to C) • I can understand concepts of how the numeral system changed to include the concept of zero and place value. • I can identify the different ways to write Whole numbers in historical context e.g. Roman Numerals.								
Addition and subtraction	• to add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	• I can use columnar addition to add numbers with up to 4 digits (e.g. 2d + 3d, 3d + 3d, 3d+ 4d, 4d + 4d). • I can use columnar subtraction to subtract numbers with up to 4 digits (e.g 3d-2d, 4d-3d).								
	• to estimate and use inverse operations to check answers to a calculation	• I can estimate answers to a calculation. • I can use inverse operations to check answers to a calculation.								
	• to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	• I can identify the operation(s) to use when solving problems. • I can solve two-step addition and subtraction problems within a context (extending to decimal units of measure). • I can justify the methods I have used to solve a problem.								
Multiplication and division	• to recall multiplication and division facts for multiplication tables up to 12 × 12	• I can recall all the multiplication facts to 12 x 6 • I can recall all of the division facts to 72 ÷ 6 • I can recall all the multiplication facts to 12 x 7 • I can recall all of the division facts to 84 ÷ 7 • I can recall all the multiplication facts to 12 x 9 • I can recall all of the division facts to 108 ÷ 9 • I can recall all the multiplication facts to 12 x 12 • I can recall all of the division facts to 144 ÷ 12								
	• to 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	• I can multiply any number by 0 • I can divide any number by 0 • I can multiply any number by 1 • I can divide any number by 1								

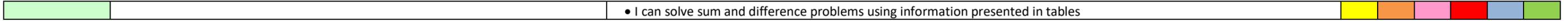|									
		• I can multiply three numbers (2x3x4) using brackets to help my calculations (e.g. (2x3) x 4)							
	• to recognise and use factor pairs and commutativity in mental calculations	• I can recognise factor pairs up to 144. • I can use related multiplication and division facts to find factor pairs up to 144. • I can write a multiplication number sentence and work out the related multiplication and division sentences							
	• to multiply two-digit and three-digit numbers by a one-digit number using formal written layout	• I can use an informal written method to calculate 2 digit x 1 digit statements (grid multiplication and chunking) • I can use a formal written method to calculate 2 digit x 1 digit statements (e.g. short multiplication and division) • I can use a formal written method to calculate 3 digit x 1 digit statements (e.g. short multiplication and division)							
	• to 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	• I know whether to use multiplication or division to solve a problem • I can solve problems involving multiplication • I can solve problems involving division • I can solve problems involving multiplication and addition. • I can work out intervals on a scale using my times table facts • I can use my multiplication and related division facts to solve problems involving objects with remainders (e.g. 3 cakes shared equally between 10 children) • I can use repeated addition to solve 2 digit number x 1 digit number calculations • I can mentally calculate 3 digit x 1 digit statements using my tables facts • I can mentally calculate 3 digit x 1 digit statements and their related division facts. • I can use multiplication to solve two-step problems • I can use division to solve two-step problems.							
Fractions (including decimals)	• to recognize and show using diagrams , families of common equivalent fractions	• I can understand the relationship between denominators and their divisors. • I can recognise equivalent fractions • I can show equivalent fractions using diagrams or shapes • I can find common equivalent fractions • I can simplify fractions in order to calculate equivalences using factors and multiples.							
	• to count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten	• I can recognise when an object/shape is divided into 100 equal parts and that each part/section is 1 hundredth. • I can count forwards/backwards in hundredths, including crossing the boundary from decimals to integer mixed numbers (for example using a number line) • I understand the connection between the fraction and decimal representations of hundredths. • I understand that hundredths are the result of a 1 digit number or quantities divided by 100 • I understand that hundredths are the result of dividing tenths by ten. • I can apply my understanding of hundredths to all contexts, e.g. number, measure etc. for example money.							
	• to 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	• I can find fraction of a shape • I can find a fraction of a quantity • I can find a fraction which is several parts of a whole.							
	• to add and subtract fractions with the same denominator.	• I can add fractions with identical denominators that total and exceed one whole. • I can subtract fractions with identical denominators that exceed one whole.							
	• to recognise and write decimal equivalents of any number of tenths or hundredths	• I can recognise the decimal equivalent of one tenth • I can write the decimal equivalent of one tenth. • I can recognise the decimal equivalent of one hundredth • I can write the decimal equivalent of one hundred • I can recognise the decimal equivalent of any given tenth • I can write the decimal equivalent of any given tenth. • I can recognise the decimal equivalent of any given hundredth. • I can write the decimal equivalent of any given hundredth.							
	• to recognise and write decimal equivalents to 1/4; 1/2; 3/4	• I can recognise decimal equivalents to 1/4; 1/2; ¾ • I can write decimal equivalents to 1/4; 1/2; ¾							
	• to find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths	• I can recognise when a 1 or 2 digit number has been divided by 10 or 100. • I can explain when a 1 or 2 digit number has been divided by 10 or 100. • I can read and identify the value of the digits within an answer as units, tenths or hundredths. • I can use language such as decimal point when describing differing values of a digit.							
	• to round decimals with one decimal place to the nearest whole number	• I can round a 1 placed decimal number to the nearest whole number.							
	• to compare numbers with the same number of decimal places up to two decimal places	• I can compare two numbers with 1 decimal place in terms of <> • I can find the difference between two numbers with 1 decimal place. • I can compare two numbers with 2 decimal places in terms of <>							

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		• I can find the difference between two numbers with 2 decimal places.						
	• to solve simple measure and money problems involving fractions and decimals to two decimal places.	• I can solve simple measure and money problems involving fractions. • I can solve simple measure and money problems involving two decimals. • I can solve simple measure and money problems involving fractions and decimals.						
Measures	• to convert between different units of measure (e.g. kilometre to metre; hour to minute)	• I can convert measures						
	• to measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	• I can measure a perimeter of a rectilinear figure in centimetres • I can measure a perimeter of a rectilinear figure in metres						
	• to find the area of rectilinear shapes by counting squares	• I can count the squares to find the area						
	• to estimate, compare and calculate different measures, including money in pounds and pence	• I can estimate different measures • I can compare different measures • I can calculate different measures						
	• to read, write and convert time between analogue and digital 12 and 24-hour clocks	• I can read the time on a 12 hour analogue clock. • I can read the time on a 12 hour digital clock. • I can read the time on a 24 hour digital clock. • I can write the time on a 12 hour analogue clock. • I can write the time on a 12 hour digital clock. • I can write the time on a 24 hour digital clock. • I can convert time between analogue and digital to 12 hours. • I can convert time between analogue and digital to 24 hours.						
	• to solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	• I can convert between hours and minutes in real life situations (eg. TV listings). • I can convert between minutes and seconds in real life situations (eg. bus timetables). • I can convert between years and months in real life situations (eg. calendars). • I can convert between weeks and days in real life situations (eg. calendars).						
Geometry: properties of shapes	• to compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	• I can compare and classify the properties and sizes of quadrilaterals for example: parallelogram, rhombus, trapezium • I can compare and classify the properties and sizes triangles for example: isosceles, equilateral, scalene						
	• to identify acute and obtuse angles and compare and order angles up to two right angles by size	• I can identify acute angles • I can identify obtuse angles • I can compare and order angles up to 180 degrees • I can identify a protractor • I can compare lengths and angles to decide if a polygon is regular or irregular						
	• to identify lines of symmetry in 2-D shapes presented in different orientations	• I can identify lines of symmetry in 2D shapes in different orientations						
	• to complete a simple symmetric figure with respect to a specific line of symmetry.	• I can draw symmetrical patterns • I can complete a simple symmetric figure with one line of symmetry • I can recognise line symmetry in a variety of diagrams including where the line of symmetry does not dissect the original shape (NS)						
Geometry: position, direction	• to describe positions on a 2-D grid as coordinates in the first quadrant	• I can describe positions on a 2D grid as co-ordinates in the first quadrant • I can draw a pair of axes in one quadrant with equal scales and integer labels • I can use ICT tools to plot co-ordinates						
	• to describe movements between positions as translations of a given unit to the left/right and up/down	• I can translate a shape in one quadrant						
	• to plot specified points and draw sides to complete a given polygon.	• I can read, write and use pairs of co-ordinates • I can plot specified points and draw sides to complete a given polygon						
Statistics	• to interpret and present discrete data using bar charts and continuous data using bar charts and time (line?) graphs	• I can interpret discrete data using bar charts with scales beyond 2, 5, 10. • I can interpret continuous data using bar charts with scales beyond 2, 5, 10. • I can interpret continuous data using time/line graphs with scales beyond 2, 5, 10. • I can present discrete data using bar charts with scales beyond 2, 5, 10. • I can present continuous data using bar charts with scales beyond 2, 5, 10. • I can present continuous data using time/line graphs with scales beyond 2, 5, 10. • I am starting to understand how continuous data within a graph shows changes over time.						
	• to solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	• I can solve comparison problems using information presented in bar charts, pictograms and other graphs • I can solve comparison problems using information presented in tables • I can solve sum and difference problems using information presented in bar charts, pictograms and other graphs.						

| | | • I can solve sum and difference problems using information presented in tables | | | | | | |

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	Autumn		Spring		Summer	
Term:	**1**	**2**	**3**	**4**	**5**	**6**

Year 5	Learning objective	Success Criteria	Coverage					
Number and place value	• to read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	• I can read numbers to at least 1 000 000 • I can determine the value of each digit for numbers to at least 1 000 000 • I can write numbers to at least 1 000 000 • I can order numbers to at least 1 000 000 • I can compare (< >) numbers to at least 1 000 000						
	• to count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	• I can count forwards or backwards in steps of 10 for any given number up to 1 000 000 • I can count forwards or backwards in steps of 100 for any given number up to 1 000 000 • I can count forwards or backwards in steps of 1000 for any given number up to 1 000 000						
	• to interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero	• I can interpret negative numbers in context (including different number lines and scales) • I can count forwards and backwards with positive and negative whole numbers through zero						
	• to round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	• I can round any number up to 1 000 000 to the nearest 10 • I can round any number up to 1 000 000 to the nearest 100 • I can round any number up to 1 000 000 to the nearest 1000 • I can round any number up to 1 000 000 to the nearest 10 000 • I can round any number up to 1 000 000 to the nearest 100 000						
	• to solve number problems and practical problems that involve all of the above	• I can solve number problems and practical problems that involve ordering numbers • I can solve number problems and practical problems that involve counting/forwards backwards • I can solve number problems and practical problems that involve negative numbers • I can solve number problems and practical problems that involve rounding numbers						
	• to read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	• I can recognise individual Roman numerals to 1000 (M) • I can read Roman numerals to 1000 (M) ie CXXIV • I can recognise years written in Roman numerals.						
Addition and subtraction	• to add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	• I can add whole numbers with 4 digits using written column methods, including crossing the tens barrier. • I can subtract whole numbers with 4 digits using written column methods, including crossing the tens barrier. • I can add whole numbers with 5 digits using written column methods, including crossing the tens barrier. • I can subtract whole numbers with 5 digits using written column methods, including crossing the tens barrier.						
	• to add and subtract numbers mentally with increasingly large numbers	• I can add numbers mentally with digits up to 5 places without crossing the tens barrier. • I can subtract numbers mentally with digits up to 5 places without crossing the tens barrier.						
	• to use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	• I can round numbers to the nearest 10, 100 and 1000. • I can use rounding to help me to check answers to calculations that I complete.						
	• to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	• I can choose the correct operation when solving a multi-step problem. • I can choose a suitable method when solving a multi-step problem. • I can explain why I used a given method when solving a multi-step problem. • I can solve addition and subtraction problems, using the correct operation.						
Multiplication and division	• to identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	• I can identify multiples of calculations up to 12 x 12 • I can identify all factor pairs of a given number • I can identify common factors of two numbers						
	• to solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors	• I can solve problems involving multiplication • I can solve problems involving multiplication using factors and multiples • I can solve problems involving multiplication using squares and cubes • I can solve problems involving division • I can solve problems involving division using factors and multiples • I can solve problems involving division using squares and cubes • I can decompose larger numbers into their factors						

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	Objective	I can statements						
	• to know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	• I know what a prime number is • I can use the term prime number correctly • I know what a prime factor is • I can use the term prime factor correctly • I know what a composite (non-prime) number is • I can use the term composite (non-prime) number correctly • I know what a square number is • I can use the term square number correctly • I know what a cube number is • I can use the term cube number correctly						
	• to establish whether a number up to 100 is prime and recall prime numbers up to 19	• I can find if a number up to a 100 is a prime. • I can recall prime numbers up to 19.						
	• to multiply numbers up to 4 digits by a one- or two-digit number using an formal written method, including long multiplication for two-digit numbers	• I can multiply numbers up to 4 digits by a one digit number. • I can multiply numbers up to 4 digits by a two digit number. • I can use a formal written method, including long multiplication for two digit number.						
	• to multiply and divide numbers mentally drawing upon known facts	• I can multiply numbers mentally. • I can divide numbers mentally • I can multiply numbers drawing upon known facts. • I can divide numbers drawing upon known facts.						
	• to 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	• I can divide numbers up to 4 digits by a one digit number. • I can divide numbers up to 4 digits by a two digit number. • I can use a formal written method, including short division showing remainders suitable for the context. • I can show my answers for division in different ways including remainders as fractions, decimals or by rounding.						
	• to multiply and divide whole numbers and those involving decimals by 10	• I can multiply whole numbers by 10, 100 and 1000. • I can multiply decimals by 10, 100 and 1000. • I can divide whole numbers by 10, 100 and 1000. • I can divide decimals by 10, 100 and 1000. • I can multiply and divide by 1000 to convert between units e.g. km and m.						
	• to recognise and use square numbers and cube numbers and the notation for squared numbers (²) and cubed (³)	• I know what a square number is • I can use the term square number correctly • I can use the notation for square numbers. • I know what a cube number is • I can use the term cube number correctly • I can use the notation for cubed numbers correctly. • I can construct equivalent statements for square and cube numbers.						
	• to solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	• I can solve problems using a combination of addition, subtraction, multiplication and division. • I can explain the meaning of the equals sign. • I can use the equals sign to solve missing number problems • I can use the equals to express information such as; a(b + c)=ab +ac.						
	• to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	• I can solve problems by multiplication and division. • I can solve problems including scaling by simple fractions. • I can solve problems including scaling by simple rates.						
Fractions (including decimals and percentages)	• to compare and order fractions whose denominators are all multiples of the same number	• I can compare fractions whose denominators are all multiples of the same number. • I can order fractions whose denominators are all multiples of the same number.						
	• to identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	• I can identify equivalent fractions of a given fraction (including tenths and hundredths) represented visually. • I can write equivalent fractions of a given fraction (including tenths and hundredths) represented visually.						
	• to 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. 2/5 + 4/5 = 6/5 = 11/5)	• I can recognise mixed numbers. • I can recognise improper fractions • I can convert an improper fraction to a mixed number and vice versa • I can write statements involving mixed numbers in a calculation with the same denominator.						
	• to add and subtract fractions with the same denominator and multiples of the same number	• I can add fractions with the same denominator • I can subtract fractions with the same denominator • I can add fractions with the same multiple						

	Objective	Success Criteria						
		• I can subtract fractions with the same multiple • I can add and subtract fractions through a variety of increasingly complex problems. (nsg) • I can count forward and backward in simple fractions (nsg)						
	• to multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	• I can multiply proper fractions by whole numbers, supported by materials and diagrams • I can multiply mixed numbers by whole numbers, supported by materials and diagrams • I can find the fraction of a number by multiplying (e.g. ¾ of 24) (nsg) • I can recognise fractions in real life situations and different contexts.(nsg)						
	• to read and write decimal numbers as fractions (e.g. 0.71 = 71/100)	• I can read decimal numbers as fractions • I can write decimal numbers as fractions • I can convert decimal numbers to fractions and vice versa, including problem solving including measures. (nsg)						
	• to recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	• I can recognise and use thousandths and relate them to tenths • I can recognise and use thousandths and relate them to hundredths and • I can recognise and use thousandths and relate them to decimal equivalents						
	• to round decimals with two decimal places to the nearest whole number and to one decimal place	• I can round decimals with two decimal places to the nearest whole number • I can round decimals with two decimal places to the nearest whole number and to one decimal place						
	• to read, write, order and compare numbers with up to three decimal places	• I can read numbers with up to three decimal places • I can write numbers with up to three decimal places • I can order and compare numbers with up to three decimal places						
	• to solve problems involving number up to three decimal places.	• I can solve problems involving number up to three decimal places.						
	• to 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 hundred, and as a decimal fraction	• I can recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred" • I can write percentages as a fraction with denominator hundred, and as a decimal fraction						
	• to 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.	• I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ • I can solve problems with a denominator of a multiple of 10 or 25.						
Measures	• to convert between different units of measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre)	• I know the relationships between different metric units of measure eg. cm and m, m and km, cm and mm, g and Kg, L and ml etc. • I can use place value and relationships to convert between units of measure eg. 5m=500cm, 7m=7000mm, 1.2L=1200ml, ¼m=0.25m=25cm, 7m=0.007km etc.						
	• to understand and use equivalences between metric and common imperial units such as inches, pounds and pints	• I know equivalences between metric and imperial units of length. Eg. cm and metres with inches and feet; and between km and miles. • I know equivalences between metric and imperial units of mass. Eg. between pounds (lbs) and Kg. • I know equivalences between metric and imperial units of volume and capacity. Eg. pints with litres and cm³.						
	• to measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	• I know that the perimeter of rectangles is 2l+2w. • I can measure lengths in cm and m to work out perimeters of shapes including squares, rectangles, T and L shapes etc.). • I can calculate the perimeter in cm and m of shapes with given lengths including squares, rectangles, T and L shapes etc., including those with some unlabelled sides. • I can find the unlabelled length of a rectangle, given its area and the length of one side. • I can find the unlabelled length of a rectangle, given its perimeter and the length of one side. • I can find the unlabelled length of a rectangle, using the algebraic formula for perimeter (eg. 4 + 2w = 20). • I can calculate the perimeter of a rectangle (including squares), given its area and the length of one side.						
	• to 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	• I know that the area of a rectangle is length x width. • I know area is measured using standard squares (eg. cm², m²). • I can calculate the area of a rectangle given the length and width. • I can compare by estimation the area of different rectangles (including squares). • I can estimate the area of irregular shapes.						
	• to estimate volume (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water)	• I understand the meaning of volume/capacity. • I can estimate how many 1cm³ blocks are needed to build a cuboid of given dimensions. • I can estimate the volume/capacity of a container using a 'standard' to compare against (eg. a 2L bottle).						
	• to solve problems involving converting between units of time	• I understand relationships between different units of time (eg. sec, min, hours and days.) • I can convert between different measures of time. • I can use all four operations to solve single and multi-step problems involving time.						
	• to use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling	• I can convert between units of measures when solving multi-step problems. • I can use all four operations and scaling to solve single and multi-step problems using decimal notation for length.						

		• I can use all four operations and scaling to solve multi-step problems using decimal notation for mass. • I can use all four operations and scaling to solve multi-step problems using decimal notation for capacity/volume. • I can use all four operations and scaling to solve multi-step problems using decimal notation for money.						
Geometry: **properties of** **shapes**	• to identify 3-D shapes, including cubes and cuboids, from 2-D representations	• I can identify 3-D shapes from 2-D representations						
	• to know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles	• I know that angles are measured in degrees • I can estimate acute angles • I can estimate obtuse angles • I can estimate reflex angles • I can compare acute angles • I can compare obtuse angles • I can compare reflex angles						
	• draw given angles, and measure them in degrees (°)	• I can draw given angles • I can measure angles in degrees						

	• to 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°
	  - other multiples of 90°
		• I can identify angles at a point and one whole turn (total 360°)
		• I can identify angles at a point on a straight line
		• I can identify a half turn
		• I can identify other multiples of 90°						

		• I can use the properties of rectangles to deduce related facts • I can find missing lengths • I can find missing angles						
		• I can distinguish between regular and irregular polygons						
		• I can draw lines with a ruler to the nearest millimetre • I can measure accurately with a protractor						
		• I can use conventional markings for parallel lines • I can use conventional markings for right angles						
		• I can use the term diagonal accurately • I can make conjectures about the angles formed between sides and diagonals						
	• use the properties of rectangles to deduce related facts and find missing lengths and angles	• I can find missing angles using known facts • I can find missing angles using known facts and relate to missing number problems						
	• to distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	• I know the difference between regular and irregu8lar shapes						
Geometry: **position,** **direction**	• to 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.	• I can identify the position of a shape following a reflection or translation • I can describe the position of a shape following a reflection or translation • I can represent the position of a shape following a reflection or translation • I know that a shape has not changed when it is translated or reflected						
Statistics	• to solve comparison, sum and difference problems using information presented in a line graph	• I can identify 3-D shapes from 2-D representations						
	• to complete, read and interpret information in tables, including timetables.	• I can complete tables including timetables • I can read tables including timetables • I can interpret tables including timetables						

Mathematics - Medium Term Plan

	Autumn		Spring		Summer	
Term:	**1**	**2**	**3**	**4**	**5**	**6**

Year 6	Learning objective	Success Criteria		Coverage					
Number and place value	• to read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	• I can read numbers to at least 10 000 000 • I can determine the value of each digit for numbers to at least 10 000 000 • I can write numbers to at least 10 000 000 • I can order numbers to at least 10 000 000 • I can compare (< >) numbers to at least 10 000 000							
	• to round any whole number to a required degree of accuracy	• I can round any number up to 10 000 000 to the nearest 10 • I can round any number up to 10 000 000 to the nearest 100 • I can round any number up to 10 000 000 to the nearest 1000 • I can round any number up to 10 000 000 to the nearest 10 000 • I can round any number up to 10 000 000 to the nearest 100 000							
	• to use negative numbers in context, and calculate intervals across zero	• I can interpret negative numbers in context (including different number lines and scales) • I can calculate intervals across zero (using a number line)							
	• to solve number problems and practical problems that involve all of the above.	• I can solve number problems and practical problems that involve ordering numbers • I can solve number problems and practical problems that involve counting forwards • I can solve number problems and practical problems that involve counting backwards • I can solve number problems and practical problems that involve negative numbers • I can solve number problems and practical problems that involve rounding numbers							
Addition and subtraction, multiplication and division	• to multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	• I can multiply multi-digit numbers up to 4 digits by a 2-digit number using a formal written method							
	• to 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 can divide numbers up to 4 digits by a two-digit whole number using the formal written method • I can interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • I can round answers to a specified degree of accuracy (NSG)							
	• to perform mental calculations, including with mixed operations and large numbers	• I can perform mental calculations, including with mixed operations and large numbers • I can calculate mentally with increasingly larger numbers and more complex calculations (NSG)							
	• to identify common factors, common multiples and prime numbers	• I can identify common factors • I can relate common factors to finding equivalent fractions (NSG) • I can identify common multiples • I can identify prime numbers							
	• to use their knowledge of the order of operations to carry out calculations involving the four operations	• I know to work out the operation inside brackets first in a number sentence • I can calculate number sentences which include brackets • I can manipulate number sentences by using brackets (NSG)							
	• to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	• I can identify the correct operation(s) to use in addition and subtraction multi-step problems • I can identify the correct operation(s) to use in addition and subtraction multi-step problems in contexts • I can explain which operations and methods to use and why							
	• to solve problems involving addition, subtraction, multiplication and division	• I can use the formal written method of columnar addition (NSG) • I can solve problems involving addition • I can use the formal written method of columnar subtraction (NSG) • I can solve problems involving subtraction • I can use the formal written methods for short and long multiplication (NSG) • I can solve problems involving multiplication • I can use the formal written methods for short and long division (NSG) • I can solve problems involving division							
	• to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.	• I can use estimation to check answers to calculations • I can use estimation to determine, in the context of a problem, levels of accuracy							

SOUTHCOATES PRIMARY ACADEMY

	Objective	I can statement						
	• Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	• I can divide numbers up to 4 digits by a two-digit number using the formal written method of short division • I can, where appropriate, interpret remainders according to the context						
Fractions (including decimals and percentages)	• to use common factors to simplify fractions; use common multiples to express fractions in the same denomination	• I can use common factors to simplify fractions • I can use common multiples to express fractions in the same denomination						
	• to compare and order fractions, including fractions >1	• I can compare and order fractions						
	• to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	• I can add and subtract fractions with different denominators • I can add and subtract fractions with mixed numbers						
	• to multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1/4 × 1/2 = 1/8)	• I can multiply simple pairs of proper fractions • I can reduce my answer to the simplest form						
	• to divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6).	• I can divide proper fractions by whole numbers						
	• to associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. ⅛)	• I associate a fraction with division • I can calculate decimal fraction equivalents						
	• to identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places	• I can identify the value of each digit to three decimal places • I can multiply and divide numbers by 10 where the answers are up to three decimal places • I can multiply and divide numbers by 100 where the answers are up to three decimal places • I can multiply and divide numbers by 1000 where the answers are up to three decimal places						
	• to multiply one-digit numbers with up to two decimal places by whole numbers	• I can multiply one-digit numbers with up to two decimal places by whole numbers						
	• to use written division methods in cases where the answer has up to two decimal places	• I can use written division methods in cases where the answer has up to two decimal places						
	• to solve problems which require answers to be rounded to specified degrees of accuracy.	• I can solve problems which require answers to be rounded to specified degrees of accuracy						
	• to recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	• I can recall equivalences between simple fractions, decimals and percentages • I can use equivalences between simple fractions, decimals and percentages						
Ratio and proportion	• to solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts	• I can solve problems using integer multiplication and division facts						
	• to solve problems involving the calculation of percentages of whole numbers or measures such as 15% of 360 and the use of percentages for comparison	• I can solve problems involving the calculation of percentages of whole numbers • I can solve problems involving the calculation of percentages of measures • I can use of percentages for comparison						
	• to solve problems involving similar shapes where the scale factor is known or can be found	• I can solve problems involving similar shapes where the scale factor is known • I can solve problems involving similar shapes where the scale factor can be found						
	• to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	• I can solve problems involving unequal sharing • I can solve problems involving grouping						
	• to enumerate all possibilities of combinations of two variables	• I can find all the possibilities when using symbols for numbers I don't know yet e.g. using x and y						
Measures	• to solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate	• I can solve multi-step problems involving conversion between units of measure (with numbers up to 3dp). • I can perform calculations for temperature, involving negative numbers, with the help of a number line.						
	• to 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 three decimal places	• I can use place value and relationships to convert between units of measures, up to 3dp eg. 502.1cm=5.021m, 2mm=0.002m, 250ml=0.25L=¼L, 2547m=2.547km etc. • I understand that speed can be measured eg. in metres-per-second, km-per-hour, miles-per-hour etc., and I can explain what it means.						
	• to convert between miles and kilometres	• I know that 8km is roughly equivalent to 5 miles, and I can use this to estimate/compare/check. • I can convert between miles and kilometres. • I understand line-graphs and map scales showing the equivalence between miles and km.						
	• to recognise that shapes with the same areas can have different perimeters and vice versa	• I can find polygons that have the same perimeter, but different rectangles. • I can find polygons that have the same area, but a different perimeter.						
	• to recognize when it is possible to use formulae for area and volume of shapes	• I can apply known area formulae when challenged with calculating the area/volume of more complex shapes (eg. by dissecting a complex shape into smaller shapes).						
	• to calculate the area of parallelograms and triangles	• I know the area of a parallelogram (base x height). • I know that the area of a triangle is ½(base x height). • I can calculate the area of parallelograms and triangles, with a given base and height measurement, using formulae.						
	• to calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³) and	• I know that volume can be measured using cubes. • I know the formula for volume of cubes and cuboids (length x width x height).						

	extending to other units, such as mm³ and km³.	• I can calculate the volume of a cube/cuboid (in cm³ and m³). • I can calculate the volume of a cube/cuboid (in mm³ and km³).						
Geometry: properties of shape	• to draw 2-D shapes given dimensions and angles	• I can draw 2-D shapes using given dimensions • I can draw 2-D shapes using given angles • I can describe the properties of shapes						
	• to recognise, describe and build simple 3-D shapes, including making nets	• I can recognise simple 3-D shapes • I can describe simple 3-D shapes • I can build simple 3-D shapes • I can recognise simple nets of 3-D shapes • I can describe simple nets of 3-D shapes • I can build simple nets of 3-D shapes • I can draw nets accurately • I can use measuring tools • I can use conventional markings and labels for lines and angles						
	• to compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles	• I can compare and classify geometric shapes based on their properties and sizes • I can find unknown angles in any triangles • I can find unknown angles in any quadrilaterals • I can find unknown angles in any regular polygons • I can describe how unknown angles in any triangles are derived • I can describe how unknown angles in any quadrilaterals are derived • I can describe how unknown angles in any regular polygons are derived • I can express the relationship of unknown angles algebraically – a=180 – (b+c) • I can express unknown measurements algebraically – d= 2xr						
	• to illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	• I can illustrate and name the radius in a circle • I can illustrate and name the diameter in a circle • I can illustrate and name the circumference in a circle • I can explain that the diameter is twice the radius						
	• to recognize angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	• I can recognise angles where they meet at a point • I can find missing angles where they meet at a point • I can recognise angles on a straight line • I can find missing angles on a straight line • I can recognise angles where they are vertically opposite • I can find missing angles where they are vertically opposite						
Geometry: position and direction	• to describe positions on the full coordinate grid (all four quadrants)	• I can describe positions on the full coordinate grid (4 quadrants)						
	• to draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	• I can draw simple shapes on the coordinate plane • I can translate simple shapes on the coordinate plane • I can reflect simple shapes in the axes on a coordinate plane • I can draw and label a pair of axis in all four quadrants with equal scaling • I can draw and label rectangles (including squares) specified by coordinates in all four quadrants • I can draw and label parallelograms specified by coordinates in all four quadrants • I can draw and label rhombuses specified by coordinates in all four quadrants • I can predict missing coordinates using the properties of shapes						
Statistics	• to interpret and construct pie charts and line graphs and use these to solve problems	• I can interpret pie charts and use these to solve problems • I can construct pie charts and use these to solve problems • I can interpret line graphs and use these to solve problems • I can construct line graphs and use these to solve problems						
	• to calculate and interpret the mean as an average.	• I can calculate the mean as an average • I can interpret the mean as an average						
Algebra	• to use simple formulae	• I can use simple formulae.						
	• to generate and describe linear number sequences	• I can generate and describe linear number sequences.						
	• to express missing number problems algebraically	• I can express missing number problems algebraically						
	• to find pairs of numbers that satisfy an equation with two unknowns	• I can find pairs of numbers that satisfy an equation with two unknowns.						

	• to enumerate possibilities of combinations of two variables.	• I can establish the number of possibilities derived from combinations of two variables. • I can use symbols and letters to represent missing numbers in a number sentence. • I can use symbols and letters to represent missing numbers in the context of length • I can use symbols and letters to represent missing numbers in the context of co-ordinates. • I can use symbols and letters to represent missing numbers in the context of angles. • I can use formulae in science. • I can use equivalent expressions • I can generalise number patterns (for example, find the nth value) • I can use algebra to solve numbers puzzles	

Mathematics - Medium Term Plan

These are the strategies that need to be taught for problem solving and they are generic to each year group, differentiated by the context of the mathematics and the age/stage of the pupils.

Assessing using and applying mathematics, reasoning		Learning outcome: "I can …."
Information	Locate/collect relevant information	I can locate relevant information I can collect relevant information I can say why it is relevant
	Sort/classify/sequence/compare/analyse	I can sort information I can sequence information (numbers shapes and objects) I can compare information I can analyse information
Reasoning	Give reasons for opinions	I can give reasons for my answers or methods I can explain why I am collecting information and what my information shows
	Make deductions	I can deduce information from a problem
	Use precise language	I can use precise mathematical language and key vocabulary in my explanations
	Make judgements	I can make judgements in problems I can decide which operation and method to use and choose a way of recording and organising information
Enquiry	Ask questions	I can ask questions relevant to the problem
	Pose problems	I can pose problems for my peers to solve
	Use a range of strategies/different approaches	I can use a range of strategies I can use different approaches
	Apply in a different context	I can apply strategies that I know to other contexts
	Plan	I can plan a way to solve a problem
	Predict	I can predict and estimate the answer to the number position I can predict the solution to a logical problem
	Test systematically	I can test my own ideas
	record systematically	I can clearly record my method and my answers I can use mathematical language when investigating a problem I can use mathematical symbols, language or diagrams to interpret results
Evaluative	Evaluate \ Check results	I can check my results with a peer I can check my results independently I can evaluate my results with a peer I can evaluate my results independently
	Judge/make general statements/	I can make judgements about a problem I can make general statements about a problem
	recognise patterns	I can recognise patterns in a problem
	draw own conclusions	I can draw own conclusions
	Evaluate criteria for judging/give clear explanations	I can give a clear explanation of my answer or my method
	Present methods, solutions and conclusions	I can present methods I can present solutions I can present conclusions
	Interpret methods, solutions and conclusions	I can interpret methods I can interpret solutions I can interpret conclusions
Strategies	Look for important words/phrases	I can identify important words and phrases
	Make a list, table or chart	I can make a list I can make a table I can make a chart
	Look for a pattern or sequence	I can look for a pattern in a problem I can look for a sequence in a problem
	See mathematical connections	I can see mathematical connections I can make mathematical connections I can use mathematical connections I can apply mathematical connections
	Make and test a prediction	I can make a prediction

		I can test a prediction
	Work backwards	I can work backwards through a problem to check my results
	Use trial and improvement	I can use trial and improvement to arrive at a sensible conclusion
		All of these can be further differentiated by:
		I can do this with an adult
		I can do this with a friend or peer
		I can do this by myself

Logic problems and puzzles

When solving logic problems and puzzles, the strategies children need to be able to draw on include :	
• Identifying carefully what is known and what needs to be found and thinking about how they might relate;	• I can say what I know and what needs to be found out • I can tell you what connections I can see
• Looking through the information that is given for any relationships or patterns that can be developed and used;	• I can tell you what relationships I can see • I can tell what patterns I can see • I can tell you how I will use the pattern to solve my puzzle
• Developing a line of thinking that involves making inferences and deductions, for example 'if I know that then this could or must be true', and testing these out against the given information;	• I can use information that I know to find things I don't know • I can test my answers to see if I am right • I can use the information I have to test my theory
• Taking one piece of the information and changing it, while keeping everything else fixed, to see what effect it has on the problem;	• I can change just one piece of information and see what happens to the problem
• Choosing a way of recording and organising the given information that helps to see how the problem is structured;	• I can choose a way of recording the information • I can organise my information so that it helps me solve the puzzle
• Checking answers along the way to see if they satisfy the conditions or rules.	• I can remember to check all the time that I am following the rules

Finding rules and describing patterns

When solving 'Patterns and relationships' problems, the strategies children need to be able to draw on include:	
• oral rehearsal of the pattern they can see to refine their thoughts	• I can practise saying the patter to help me sort out my thinking
• having a system for recording the pattern e.g. using pictures, tables or lists of calculations	• I can make a list to show my pattern • I can use pictures to show my patterns • I can use calculations to show my patterns
• organising the recording of patterns, e.g. making an ordered list or table and adapting it as more information is collected in order to predict what comes next	• I can make an ordered list to help me predict what comes next • I can make a table to help me predict what comes next • I can change my lists and tables when I need to
• eventually, describing same general term using mathematical notation even if they see the sequence differently.	• I can use mathematical language to describe my patterns • I can explain my findings using mathematical language

Finding all possibilities

When solving 'Finding all possibilities' problems, the strategies children need to be able to draw on include:	
• having a system for testing possibilities, e.g. start with a small number and build up to bigger numbers	• I start with small numbers to help me be systematic
• organising the recording of possibilities, e.g. make an ordered list or table and adapt it as more information is collected	• I can make an ordered list to help me predict what comes next • I can make a table to help me predict what comes next • I can change my lists and tables when I need to

• using a method of tracking what has been included and what has not to isolate relevant information	• I can sort through the information to see what is important
	• I can tell you what other information I need
• having a way of checking for any repeats and deciding when all possibilities have been found.	• I can choose a way of recording all the possibilities so that I can check for repeats
	• I can decide when I think all the possibilities have been found and explain why.