SMA

Maths

Autumn **Spring** **Summer**

EYFS			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number – Counting and number value	Can count up to or back from 5 Can recognise digits to 5 Can say one more than a number to 5 Can estimate small amounts and check them by moving items one at a time Knows that the amount should remain the same on each count Knows that the number will be more or less if items are added or taken away	Can count up to or back from 10 Can recognise digits to 10 Can say one more than a number to 10 Can estimate small amounts and check them by count matching Can say one more/ less than a number to 10 Uses own language to discuss amounts and make comparisons between quantities	Count reliably with numbers from 1 to 20 Recognise all numbers to 20 Can place numbers from 1-20 in order Can say which number is one more or one less than a given number (to 20). Children estimate a number of objects and check quantities by counting up to 20 (using count matching) Can use every day language to compare quantities/ objects
Number – Addition, subtraction, multiplication, division and estimation	Can recognise when objects are put into groups of the same amount each Can find matching groups that are the same Can chant in 2s up to 10 Can put together two amount up to 5 and say what the new number is more Knows that, when some objects are taken away from an amount, the number of objects will be less Can recognise when each person is given the same amount Knows that an amount can be shared out equally	Can solve simple problems by counting in 2s and may begin to count in 10s Can recognise how much of an amount has been shared Can chant in 2s up to 20 and may count in 10s Can add single digit amounts of numbers up to 10 Can take away single digit amounts up to 10 May start to count forwards to solve a problem Can recognise when each person is given the same amount Begins to double/ halve by putting two equal groups together/ breaking an amount into two equal groups	They solve practical problems that involve combining groups of 2, 5 or 10, Can share amounts into equal groups. Using quantities and objects, can add two single-digit numbers and count on to find the answer. Using quantities and objects, can subtract two single-digit numbers and count back to find the answer. They solve problems, including doubling, halving and sharing.
Shape, Space and Measure	Can use their own, consistent, terms to describe the size, weight, capacity, position, distance time and money and responds to the use of everyday language Makes attempts to solve simple problems, sometimes talking about them in their own terms Explores characteristics of objects and shapes and talks about them in everyday terms. Can estimate, measure and weigh objects using manipulation, in response to prompts. Can compare objects on their own terms and may order these according to their own criteria. Talks about where familiar objects are. May use simple time related vocabulary (now, later, before)	Can use common everyday language to talk about size, weight, capacity, position, distance, time and money Talks about problems in their own terms when solving them and can respond to everyday language in order to solve a problem Explores characteristics of objects and shapes and talks about them using a mixture of everyday language and mathematical terms – not necessarily accurately.. Can estimate, measure and weigh objects using manipulation, without prompting. Can compare order objects according to prompts or given criteria Can use some appropriate language to talk about properties, position and time	Can use everyday language, including some mathematical terms to talk about measure Can use every day language to solve problems. Can recognise, create and describe patterns. Can explore characteristics of everyday objects and shapes and use mathematical language to describe them. Can estimate, measure and weigh objects according to size or weight Can compare and order objects Can talk about properties, position and time using appropriate vocabulary and phrases

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Year 1			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number and Place value	Count to and across 10. Beginning with 0 or 1, or from any given number Count, read and write numbers to 10 in numerals; Count in multiples of twos to 20 **Given a number, identify one more and one less than numbers to 20** Read and write numbers from 0-6 in words	Count to and across 50. Beginning with 0 or 1, or from any given number Count, read and write numbers to 50 in numerals Count in multiples of twos and tens **Given a number, identify one more and one less of numbers to 50** Read and write numbers from 1 to 10 in words Use language more than, less than, same as, equal to	Count to and across 100, forwards and backwards. Beginning with 0 or 1, or from any given number Count, read and write numbers to 100 in numerals Count in multiples of twos, fives and tens Identify and represent numbers using objects and pictorial representations including the number line, and use the language of equal to, fewer, most, least Read and write numbers 1- 20 in words Recognise odd and even numbers
Addition and Subtraction	Read, write and interpret mathematical statements involving addition and subtraction using concrete equipment Know bonds to and related subtraction facts within 5 Add and subtract one-digit numbers within 10 using concrete resources Solve one-step problems that involve addition and subtraction, use concrete objects	Read, write and interpret mathematical statements involving addition, subtraction and equals pictorially Represent and use number bonds and related subtraction facts within 10 Add and subtract one-digit numbers to 20, including zero (e.g. 4 + 9 + 7) with concrete and pictorial resources Solve one-step problems that involve addition and subtraction, use concrete objects and pictorial representations	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Add and subtract one-digit and two-digit numbers to 20, including zero Solve one-step problems that involve addition and subtraction, use concrete objects and pictorial representations, and missing number problems such as 7= ☐ - 9 Understand '=' as a balancing sign
Multiplication and Division	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects (as lots of and sharing)	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects and pictorial representations	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher (grouping and sharing)
Fractions	Recognise, find and name a half as one of two equal parts of an object using concrete equipment Recognise, find and name a quarter as one of four equal parts of an object using concrete equipment	Recognise, find and name a half as one of two equal parts of an object, shape and quantity, pictorially to 10 Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity, pictorially to 12	Recognise, find and name a half as one of two equal parts of an object, shape and quantity to 20 Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity to 20
Measurement	Compare lengths using short/long, shorter/longer Compare mass/weight using heavy/light, heavier/lighter Compare capacity using full/empty	Measure length/height using ruler/metre stick Measure mass/weight using scales to the nearest kg Tell the time to the hour	Tell the time to half past Recognise different coins and notes
Geometry	Name basic 2D shapes	Name 3D shapes	Describe ½, ¼, ¾ turns

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Year 2			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number and Place value	Count in steps of 2, 10 and 5 from 0, forward and backward. Recognise the place value of each digit in a two-digit number (tens, ones) Identify, represent numbers using different concrete and pictorial representations Compare and order numbers from 0 up to 100; using language more than, less than, equals Read and write numbers to at least 100 in numerals and to 20 in words Use place value and number facts to solve problems, pictorially e.g. 2+3=5 so 20+30=50	Count in steps of 2, 3 and 5 from 0 and any other one digit number, forward Recognise the place value of each digit in a two-digit number Identify, represent numbers using different pictorial representations, including the number line Compare and order numbers from 0 up to 100; use <, > and = signs Read and write numbers to at least 100 in numerals and 50 in words Use place value and number facts to solve problems (e.g. using partitioning to add and subtract mentally, e.g. 10+7=17, 19-10=9	Count in steps of 2, 3 and 5 from 0 and any other one digit number, forward or backward and in steps of 10 from any numbers Compare and order numbers from 0 up to 200; use <, > and = signs Represent and estimate numbers to 200 using different pictorial representations Read and write numbers to 200 in numerals and to 100 in words Use place value and number facts to solve problems (e.g. using partitioning to add and subtract mentally, e.g 23 + 20 +3 and 23 = 10 + 13)
Addition and Subtraction	Solve problems with addition and subtraction: -Using concrete objects and pictorial representations, including those involving numbers, quantities and measures Recall and use addition and subtraction facts to 20 fluently, Add and subtract using concrete objects, pictorial representations Add and subtract mentally, including: -A two- digit number and ones -Three one-digit numbers Show that addition of two number can be done in any order (commutative) and subtraction of one number from another cannot Know and use the inverse relationships between addition and subtraction to 20	Solve problems with addition and subtraction: -Using concrete objects and pictorial representations, including those involving numbers, quantities and measures, recording in a formal abstract way Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 50 Add and subtract using concrete objects, pictorial representations Add and subtract mentally, including: -A two- digit numbers and tens -Two two-digit numbers Recognise and use the inverse relationships between addition and subtraction and use this to check calculations and missing number problems to 20	Add and subtract numbers mentally including A two-digit number and ones A two digit number and tens A two-digit number and hundreds Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 Add and subtract numbers with up to two digits, using formal written methods of columnar addition and subtraction Solve problems involving missing numbers
Multiplication and Division	Derive multiplication and division facts for the 2, 5 and 10 multiplication tables Recognise odd and even numbers Represent and interpret mathematical statements for multiplication and division with concrete and pictorial resources Solve problems involving multiplication and division, using concrete materials and repeated addition inc. problems in contexts	Recall multiplication and division facts for the 2, 5 and 10 multiplication tables Calculate mathematical statements for any multiplication and division using concrete and pictorial resources Show that multiplication is the inverse of division using concrete or pictorial resources and using arrays Solve problems involving multiplication and division, using arrays, repeated addition, mental methods, and multiplication and division facts, including problem	Derive multiplication and division facts for the 3 times tables Write and calculate mathematical statements for multiplication and division using mathematical signs X ÷ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Solve problems including missing number problems involving multiplication and division
Fractions	Recognise, find, name and write fraction 1/4 and ½ of a length, shape, set of objects or quantity to 24	Recognise, find, name and write fractions ¼. 2/4 and ¾ of a length, shape, set of objects or quantity to 24 Write simple fractions, e.g. ½ of 6 = 3 Recognise the equivalence of 2/4 and ½ Count up in halves and quarters e.g. ½, 1, 1 ½ , 2, 2 ½	Count up and down in tenths Recognise that tenths arise from dividing an object into 10 equal parts and dividing a one digit number by 10 Recognise, find, name and write fractions 1/3, ¼ , 2/4 and ¾ of a length, shape or quantity Write simple fractions e.g. ½ of 6 = 3
Measurement	Choose appropriate standard units of measure for: Height/length (m,cm,mm) Mass/weight (kg, g) Tell the time to the hour and half past	Choose appropriate standard units of measure for: Capacity (L, ml) Temperature (degrees Centigrade) Tell the time to quarter to/past Find different combinations of coins that have the same value Use symbols for pounds (£) and pence (p)	Compare and order length, mass, volume using > < = Solve problems with money including working out change Tell the time to 5 minutes Compare intervals of time e.g. 1 hour is more than 45 minutes Know the number of minutes in an hour Know the number of hours in a day
Geometry	Know the number of sides of 2D shapes Arrange shapes in patterns	Know properties of 3D shapes inc edges, vertices, faces Identify lines of symmetry in 2D shapes	Sort 2D shapes based on their properties Sort 3D shapes based on their properties Know terms clockwise and anticlockwise
Statistics	Interpret and construct tally charts Answer questions about tally charts	Interpret and construct pictograms and tables Answer questions about pictograms and tables	Interpret and construct bar/block graphs Answer questions about bar/block graphs

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Year 3			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number and Place value	Count in steps of 2, 3, 10 and 5 from 0, from any number, forward or backward Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Identify and represent numbers to 200 using different pictorial resources including using number lines Compare and order numbers from 0 up to 100; use <, > and = signs Read and write numbers to at least 100 in numerals and in words Use place value and number facts to solve problems (e.g. using partitioning to add and subtract mentally, e.g 23 + 20 +3 and 23 = 10 + 13)	Count from 0 in multiples of 4, 50 and 100 from any number, forward or backward Find 10 or 100 more or less than a given number Compare and order numbers from 0 up to 500; use <, > and = signs Identify and represent numbers to 500 using different pictorial resources including the number line Read and write numbers up to 500 in numerals and in words Solve problems by partitioning hundreds, tens and ones e.g. 472 – 70 = 402	Count from 0 in multiples of 6 and 8 Recognise the place value of each digit in a 4-digit number Compare and order numbers to 1000 Read and write numbers up to 1000 in numerals and in words Solve missing number problems using place value e.g. 463 - □ = 403
Addition and Subtraction	Solve problems with addition and subtraction: • Using concrete objects and pictorial representations, including those involving numbers, quantities and measures, recording in a formal methods Recall and use addition and subtraction facts to 20 fluently, Add and subtract 2-digit numbers using concrete objects and pictorial representations Add and subtract numbers with up to two digits, using formal written methods without regrouping Mentally add and subtraction • A two- digit number and ones • A two- digit numbers and tens • Three one-digit numbers Show using concrete and pictorial resources (including a number line) that addition of two number can be done in any order (commutative) and subtraction of one number from another cannot Solve missing number problems to 100	Add and subtract numbers mentally, including: • two two- digit numbers • A two- digit number and tens • A two- digit number and hundreds Derive and use related addition and subtraction facts up to 100 Add and subtract numbers with up to two digits, using formal written methods and regrouping Show that formal written addition of two number can be done in any order (commutative) and subtraction of one number from another cannot Solve problems, including missing number problems, using number facts and place value to 500	Add and subtract numbers mentally, including: • A three- digit number and ones • A three- digit number and tens • A three- digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction Estimate the answer to a calculation and use inverse operations to check answers Solve problems, including missing number problems. Using number facts, place value, and more complex addition and subtraction
Multiplication and Division	Recall and use multiplication and division facts for the 2, 5 and 10 times tables Calculate mathematical statements for multiplication and division within the multiplication tables using pictorials inc arrays Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, an multiplication and division facts, including problems in contexts	Recall and use multiplication and division facts for the 3 and 4 times tables Write and calculate mathematical statements for multiplication and division, and write them using the multiplication (x), division (÷) and equals (=) Solve problems, including missing number problems, involving multiplication and division	Recall and use multiplication and division facts for the 6 and 8 times tables Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods 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

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Fractions	Recognise, find, name and write fractions 1/2, ¼. 2/4 and ¾ of a length, shape, set of objects or quantity Know simple fractions, e.g. ½ of even numbers to 20 Know that ¼ is half then half again Recognise the equivalence of 2/4 and ½	Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts Recognise, find, name and write fractions 1/3, ¼. 2/4 and ¾ of a length, shape, set of objects or quantity Calculate simple unit fractions, e.g. ½ of 26 = 13 using concrete and pictorial resources Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)	Recognise, find and write fractions of a set of objects using pictorial resources: unit fractions (where the numerator is 1) and non-unit fractions with small denominators Recognise and show, using diagrams, equivalent fractions with small denominators Compare and order unit fraction, Compare and order fractions with the same denominators Solve problems that involve fractions using pictorial resources including bar modelling
Measurement	Tell the time on an analogue clock to 5 minutes Compare lengths, mass and volume/capacity Measure length in m and cm Measure mass/weight in kg	Tell the time on an analogue clock including those with Roman Numerals l to Xll Use vocabulary a.m and p.m. Know number of seconds in a minute Know number of days in each month Measure length in cm and mm using a ruler Measure mass/weight in kg and g with scales Measure capacity/volume in L and ml	Tell the time on a digital 12 and 24 hour clock Know number of days in each year and leap year Calculate the duration of events Measure perimeter of 2D shapes Add and subtract amounts of money
Geometry	Draw 2D shapes Recognise angles as one of the properties of shapes Identify a right angle	Create 3D shapes from 2D shapes Know that 2 right angles make a half turn, 3 right angles make a ¾ turn and 4 right angles make a complete turn	Identify horizontal and vertical lines Identify pairs of parallel lines Identify perpendicular lines
Statistics	Interpret and present data in the form of a pictogram	Interpret and present data in the form of a bar chart Interpret and present data in the form of a table	Solve problems using information from bar charts, pictograms and tables

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Year 4			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number and Place value	Count from 0 in multiples of 4, 8, 50 and 100; Find 10 more or less than a given number Recognise the place value of each digit in a 3-digit number Compare and order numbers to 200 Read and write numbers up to 1000 in numerals and in words Solve missing number problems using place value e.g. 463 - □03 Round numbers to the nearest 10 Identify 3-digit numbers from different concrete and pictorial representations	Count from 0 in multiples of 25 and 1000 Find 100 more or less than a given number Round numbers to the nearest 100 Recognise the place value of each digit in a four-digit number (hundred, tens, ones) Compare and order numbers to 1000 Represent 3 and 4 digit numbers using different concrete and pictorial representations Read and write numbers up to 2000 in numerals and in words Solve number problems and practical problems involving these ideas Understand the concept of zero and place holder	Count in multiples of 6, 7 and 9 Find 1000 more or less than a given number Count backwards through zero to include negative numbers Order and compare numbers beyond 1000 Round any number to the nearest 1000 Solve number and practical problems that involve all of the above and with increasingly large positive numbers Read Roman numerals to 100 (I to C) and know that over time, the numeral system has changed
Addition and Subtraction	Add and subtract numbers mentally: • A two- digit number and ones • A two- digit number and tens • A three- digit number and ones Add and subtract 2-digit numbers, using formal written methods of columnar addition and subtraction Realistically estimate the answer to a calculation Use inverse operations to check answers	Add and subtract numbers mentally, including: • A three- digit number and tens • A three- digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction Estimate the answer to a calculation and use inverse operations to check answers Solve problems, including missing number problems. Using number facts, place value, and more complex addition and subtraction	Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate Estimate and use the inverse to check answers to a calculation Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and Division	Recall and use multiplication and division facts for 2- 6 and 10 times tables Calculate a two-digit by a one-digit number using concrete and pictorial resources Understand that multiplying and dividing by 10 means scaling (10 times bigger/smaller) Solve problems, involving multiplication and division using pictorial representation	Recall and use multiplication and division facts for the 8 and 9 times tables Write and calculate two-digit numbers times one-digit numbers, using mental and progressing to formal written methods Solve problems, including missing number problems, involving multiplication and division	Recall multiplication and division facts for multiplication tables up to 12 x 12 Use place value, known and derived facts to multiply and divide mentally , including: multiplying by 0 and 1; dividing by 1, multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculation Multiply three- digit numbers by one-digit numbers using formal written layout Solve problems involving multiplying and dividing
Fractions	Recognise, find and write fractions of a set of objects using pictorial resources: unit fractions (where the numerator is 1) and non-unit fractions with small denominators Recognise and show, using diagrams, equivalent fractions of ½ and ¼ Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) using concrete and pictorial resources Compare and order unit fractions (where the numerator is 1), Compare and order fractions with the same denominators	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 Recognise, find and write unit fractions of a discrete set of objects Recognise and show, using diagrams, equivalent fractions with small denominators Add and subtract fractions with the same denominator with one whole (e.g. 5/7 + 1/7 = 6/7) Compare and order unit fraction, and fractions with the same denominators Know the decimal equivalent of ½	Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and **dividing tenths by ten** Recognise and show equivalent simple fractions e.g 1/3 = 2/6 Recognise and write decimal equivalents of any number in tenths or hundredths Recognise and write decimal equivalents to: 1/4 , ¾ Recognise the effect of dividing a one or two-digit number by 100, identifying the value of the digits in the answer as ones, tenths and hundredths Round decimals with one decimal place to the nearest whole number Compare numbers with the same number of decimal places up to two decimal places

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	Solve problems that involve fractions using concrete and pictorial resources including bar modelling	Divide one and two-digit numbers by 10 identifying the value of each digit in the answer Solve problems that involve all of the above	Solve problems involving increasingly harder fractions to calculate quantities Solve simple measure problems involving fractions and decimals to two decimal places Solve simple money problems involving fractions and decimals to two decimal places
Measurement	Read the time on a 12 hour and 24 hour clock	Measure and calculate the area of rectilinear shape by counting squares Convert weeks to days and years to months	Convert km to m, L to ml, m to cm Hours to minutes Measure and calculate the perimeter of a rectilinear shape in m and cm Convert hours to minutes and minutes to seconds
Geometry	Classify 2D shapes based on properties Identify acute and obtuse angles Identify lines of symmetry in 2D shapes	Order angles up to 180 degrees Describe positions on a grid as coordinates x,y	Reflect simple shapes along a line of symmetry Describe movement of a shape in a grid as translation Plot 2D shapes on a grid
Statistics	Present data as bar charts	Solve problems using information from bar charts	Present data as time graphs (line graphs) Solve problems using information from time graphs

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Year 5			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number and Place value	Count in multiples of 6, 7, 9, 25 and 1000 Find 1000 more or less than a given number Recognise the place value of each digit in a five-digit number Order and compare numbers to 10,000 Identify, represent and estimate numbers using different pictorial representations Round any number to the nearest 10, 100 or 1000 Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed Understand the concept of zero and place holder	Count in multiples of any number up to 10 (up to 1000) Read, write, order and compare numbers to at least 500,000 and determine the value of each digit Count forwards and backwards in whole numbers through zero to negative numbers Round any number up to 500,000 to the nearest 10, 100, 1000, 10,000 Solve number problems and practical problems that involve all of the above Read and write Roman numerals to 500 and recognise years written in Roman numerals	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit Count forwards and backwards in steps of powers of 10 for any given number up to 1, 000, 000 Interpret negative numbers in context e.g temperature, Count forwards and backwards with positive and negative whole numbers through zero inc fractions Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000, 100,000 Solve number problems and practical problems that involve all of the above Read and write Roman numerals to 1,000 (M) and recognise years written in Roman numerals
Addition and Subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Accurately estimate and use the inverse to check answers to a calculation Solve addition and subtraction two-step problems in contexts	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Add and subtract 2 and 3-digit numbers mentally Solve addition and subtraction two-step problems in contexts and explain how and why	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with speed and accuracy Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Solve addition and subtraction multi- step problems in contexts, deciding which operations and methods to use and be able to explain why
Multiplication and Division	Recall multiplication and division facts for multiplication tables up to 12 x 12 Multiply and divide any number by 10 inc decimals Use place value, known and derived facts to multiply and divide mentally , including: multiplying by 0 and 1; dividing by 1, multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculation Multiply two digit and three- digit numbers by one-digit numbers using formal written layout Solve problems involving multiplying and adding, including using distributive law to multiply two-digit number by one-digit, inc scaling problems	identify factors of any 2-digit number within the times tables Identify multiples and factors, including all factor pairs of a number, and common factors of two digit numbers Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers Multiply two digit and three- digit numbers by one-digit and two-digit numbers using formal written layout multiply and divide numbers mentally drawing upon known facts (single digits) Divide numbers up to 3 digits by a one-digit number using the formal written method for short division Multiply and divide whole numbers and those involving decimals by 100 and 1000 Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign inc. missing value problems e.g. 3 x ☐ x ☐	Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors Establish whether a number up to 100 is prime and recall prime numbers up to 19 Multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts Divide numbers up to 4 digits by a one-digit number using the formal written method for short division and interpret remainders appropriately for the context Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 Recognise and use square numbers and cube numbers and the notation for squares (small 2) and cubes (small 3) Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Solve problems involving multiplication and division, including scaling by simple fraction and problems involving simple rates
Fractions , decimals and percentages	Recognise and show common equivalent fractions	Compare and order fractions whose denominators are all the same	Compare and order fractions whose denominators are different Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths

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	Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten Solve problems involving increasingly harder fractions including using bar modelling Add and subtract fractions with the same denominator Recognise and write decimal equivalents of any number tenths or hundredths Recognise and write decimal equivalents to: ½. 1/4 , ¾ Find the effect of dividing a one or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths Round decimals with one decimal place to the nearest whole number Compare numbers with the same number of decimal places up to two decimal places Solve simple measure and money problems involving fractions and decimals to two decimal places	Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten Add and subtract fractions with different denominators Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to: ½, 1/3 1/4 , ¾ , 1/5, 1/6 Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred' and write percentages as a fraction with a denominator hundred Read, write and order and compare numbers with up to two decimal places Round decimals with two decimal places to the nearest whole number Read and write decimal numbers as fractions (.e.g. 0.71 = 71/100)	Recognise mixed numbers and improper fractions and convert from one form to the other Write mathematical statements > 1 as mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5) Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Read and write decimal numbers as fractions (.e.g. 0.71 = 71/100) Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Round decimals with two decimal places to the nearest whole number and to one decimal place Read, write and order and compare numbers with up to three decimal places Solve problems involving numbers with up to three decimal places Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred' and write percentages as a fraction with a denominator hundred, and as a decimal number Solve problems which require knowledge of percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25
Measurement	Convert km to m, m to cm, hours to minutes, g to kg, L to ml Measure and calculate the area and perimeter of a rectilinear shape in m and cm Convert hours to minutes and minutes to seconds	Calculate the perimeter of composite rectangular shapes in cm and m Solve problems converting units of time inc. days to weeks, weeks to day, weeks to months, months to weeks Use concrete resources to estimate capacity and volume	Convert between common imperial and metric units of measure Convert between units of measure of length, mass and capacity Calculate the area of composite rectangular shapes in cm and m Solve problems converting units of time inc. days to years also in a leap year
Geometry	Recognise acute and obtuse angles Understand what reflection is Reflect simple shapes along a line of symmetry Describe movement of a shape in a grid as translation Plot 2D shapes on a grid	Know angles are measured in degrees Compare acute and obtuse angles Measure angles in degrees Identify a right angle as a ¼ turn and 2 rights angles as ½ turn Find missing lengths of 2D shapes (given the perimeter) Distinguish between regular and irregular polygons based on sides and angles	Identify 3D shapes from nets Compare acute and obtuse and reflex angles Draw angles in degrees Identify angles as fractions of turns and turns as multiples of angles Find missing angles as part of a right angle and 180 degrees Translate a shape on a grid
Position and Direction			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 yet changed
Statistics	Read and present data as bar graphs and time graphs (line graphs)	Solve problems relating to information presented as tables	Solve problems relating to lines graphs Solve problems relating to timetables

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Year 6			
Strand	**Emerging (E)**	**Developing (D)**	**Secure (S)**
Number and Place value	Read, write numbers to 100,000 and determine the value of each digit Count forwards and backwards in steps of 10,100,1000 etc from any number Interpret negative numbers in context e.g. temperature Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 Know and use the vocabulary of prime numbers Read and write Roman numerals to 100 (M) and recognise years written in Roman numerals	Order and compare numbers to at least 1,000,000 and determine the value of each digit Interpret negative numbers in context count forwards and backwards with positive and negative whole numbers through zero Round any whole number to a required degree of accuracy Solve number problems and practical problems that involve all of the above Read and write Roman numerals to 1,000 (M) and recognise years written in Roman numerals	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit Round any whole number to any required degree of accuracy Use negative numbers in context, and calculate intervals across zero Solve missing number problems and practical problems
Addition and subtraction	Add and subtract whole numbers with more than 4 digits using formal written methods (columnar addition and subtraction) Add and subtract 2 and 3 digit numbers mentally Use rounding to check answers to calculations Solve addition and subtraction multi- step problems in contexts and be able to explain how	Add and subtract whole and digital numbers with more than 4 digits, using formal written methods (columnar addition and subtraction) Add and subtract 3/4 digit numbers mentally	Solve two-step problems involving addition and subtraction including rounding to check answers Solve addition and subtraction multi-step problems in contexts and be able to explain how and why Solve missing number problems inc. those with decimals e.g. 4.7 - ☐ = 2.8 + 1.2
Multiplication and Division	Identify multiples and common factors, including all factor pairs of a number Know and use the vocabulary of prime factors and composite (non-prime) numbers and recall prime numbers up to 19 Solve problems involving multiplication and division Multiply numbers up to 3 digits by a one -digit number using partitioning or grid method Multiply and divide numbers mentally drawing upon known facts Divide numbers up to 3 digits by a one-digit number using the formal written Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Multiply up to 4-digit numbers by a one-digit whole number using the formal written method Divide numbers up to 4 digits by a one-digit whole number using the formal written method of long division, with remainders Solve problems involving multiplication and division Use estimation to check answers to calculations Establish whether a number up to 100 is prime Recognise and use square numbers and cube numbers and the notation for squares (small 2) and cubes (small 3)	Multiply multi-digit numbers up to 4-digit numbers by a two-digit whole number using the formal written method of long multiplication Divide numbers up to 4 digits by a two-digit whole number using the formal written method and interpret remainders as fractions, decimals or by rounding, as appropriate Solve problems involving multiplication and division Use estimation to check answers to calculations
Fractions, decimals and percentages	Add and subtract fractions with the same denominators (inc mixed numbers) Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths Compare and order fractions whose denominators are all multiples of the same number Recognise mixed numbers and improper fractions and convert from one form to the other Write mathematical statements > 1 as mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5) Read and write decimal numbers as fractions (.e.g. 0.71 = 71/100)	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Compare and order fractions with different denominators Identify the value of each digit to three decimal places Solve problems which require answers to be rounded to specified degrees of accuracy Know equivalences between simple fractions, decimals and percentages for ½ , ¼ , ¾, 1/5 Solve problems involving scaling by simple fraction Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Round decimals with two decimal places to the nearest whole number and to one decimal place	Use common factors to simplify fractions Use common multiples to express fractions in the same denomination Compare and order fractions, including fractions > 1 Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. ½ x ½ = 1/4) Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6) Associate a fraction with a division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) Solve problems which require answers to be rounded to specified degrees of accuracy Recall and use equivalences between simple fractions, decimals and percentages, including different contexts

Autumn **Spring** **Summer**

	Round decimals with one and two decimal places to the nearest whole number Read, write and order and compare numbers with up to three decimal places Solve problems involving numbers with up to three decimal places Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred' and write percentages as a fraction with a denominator hundred, and as a decimal number	Solve problems which require knowledge of percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25	
Ratio and Proportion	Understand what ratio is using simple pictorial representation Know that ratio is expressed as x:y Understand what proportion is with the use of simple pictorial representations Know that proportion is usually expressed as a fraction	Solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and use the percentages for comparison Solve problems involving similar shapes where the scale factor is known or can be found	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and use the percentages for comparison Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Algebra	Understand that algebra is the replacement of numbers with letters	Solve simple algebraic problems e.g. 123 + b = 160 3a + 5 = 20 Generate and describe linear number sequences e.g. x + 2 = y	Express missing number problems algebraically Find pairs of numbers that satisfy number sentences involving two unknown Enumerate all possibilities of combinations of two variables
Geometry Position and Direction	Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes		
Geometry Properties of shape	Draw 2-D shapes using given dimensions and angles Compare and classify geometric shapes based on their properties and sizes and angles Recognise, describe and build simple 3-D shapes, including making nets	Find unknown angles in any triangle, quadrilateral and regular polygons Illustrate and name parts of circles, including radius, diameter and circumference and know that diameter is twice the radius Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
Statistics	Calculate and interpret the mean as average	Interpret and construct pie charts and line graphs and use these to solve problems	
Measurement	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, suing decimal notation to up to 3 decimal places Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate Convert between miles and kilometres	Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles Calculate, estimate and compare volume of cubes and cuboids using standard units including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units e.g. mm^3 and km^3	