Dream Big, Aim High & Make a Difference

Maths curriculum Overview – EYFS

Numbers

Cardinality and Counting	Comparison	Composition
Can say number words in sequence Can tag each object with one number word Knows the last number counted gives the total so far Recognises small quantities without needing to count them all (subitising) Can recognize numeral meanings and match a number symbol with a number of things Knows that the number does not change if things are rearranged (as long as none have been added or taken away)	Can use the language of more than and less than to compare groups of objects Can identify groups with the same number of things Can compare numbers and explain how they know To begin reasoning by explaining which amount they would prefer and why Knows the "one more than/one less than" relationship between counting numbers	Can identify smaller numbers within a number (I can see 4 and 1, I can see 3 and 2 etc) To begin to recognise that they can partition a number of things into two groups, and recognise that those groups can be recombined to make the same total Know that a number can be partitioned into different pairs of numbers Know that a number can be partitioned into more than two numbers Begin to recall what pairs make a given number (number bonds)

Shape, Space and Measures

Measures	Pattern	Shape and Space
Recognises specific attributes eg. A stick is long and adults are tall Can compare amounts of continuous quantities eg. They can find something that is longer or shorter, heavier or lighter etc Shows awareness of comparison in estimating and predicting Can compare indirectly eg. Putting things in order of	Can continue an AB pattern Can copy an AB pattern Can make their own AB pattern Can spot an error in an AB pattern Can identify the unit of repeat Can continue an ABC pattern	Developing a sense of special awareness Developing spatial vocabulary eg in, on, under, up, down, across, in front of, behind etc. Developing shape awareness through construction Can represent special relationships Can identify similarities between shapes

height, weight or capacity Can recognise the relationship between the size and the number of units eg. A teaspoon would take longer than a bucket to fill a water tray Begins to use units to compare things Begins to use time to sequence events eg. Important times in their day and some sequences of time that are significant to them Beginning to be aware of specific time durations	Can continue a pattern that ends mid-unit Can make their own ABB, ABBC patterns Can spot an error in an ABB pattern Can begin to symbolise the unit structure eg. A red dot representing a red dinosaur, a squiggle or letter R for red dinosaur Can generalise structures to another context or mode eg. Repeating a pattern of shapes/colours as a pattern of leaves and feathers etc Can make a pattern which repeats around a circle Can make a pattern around a border with a fixed number of spaces Is able to spot patterns in the world around them	Shows awareness of the properties of shapes Can describe properties of shapes using informal language eg ball-shaped, house-shaped, fat triangle, pointy triangle etc. Developing an awareness of relationships between shapes

Maths curriculum Overview – Year 1

Number and Place Value

Counting	Comparing Numbers	Identifying, Representing and Estimating Numbers	Reading and Writing Numbers (Including Roman Numerals)	Understanding Place Value	Rounding	Problem Solving
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** **given a number, identify one more and one less**	use the language of: equal to, more than, less than (fewer), most, least	identify and represent numbers using objects and pictorial representations including the number line	read and write numbers from 1 to 20 in numerals and words.			

Number: Addition and Subtraction

Number Bonds	Mental Calculation	Written Methods	Inverse Operations, Estimating and Checking Answers	Problem Solving
represent and use number bonds and related subtraction facts within 20	add and subtract one-digit and two-digit numbers to 20, including zero read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9

Number: Multiplication and Division

Multiplication & Division Facts	Mental Calculation	Written Calculation	Properties of Numbers: Multiples, Factors,	Order of Operations	Inverse Operations, Estimating and Checking	Problem Solving

			Primes, Square and Cube Numbers		Answers	
count in multiples of twos, fives and tens (copied from Number and Place Value)						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

Number: Fractions (including decimals and percentages)

Counting in Fractional Steps	Recognising Fractions	Comparing Fractions	Comparing Decimals	Rounding Including Decimals	Equivalence (Including Fractions, Decimals and Percentages)	Addition and Subtraction of Fractions	Multiplication and Division of Fractions	Multiplication and Division of Decimals	Problem Solving
	recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity								

Algebra

Equations	Formulae	Sequences
solve one-step problems that involve addition and		*sequence events in chronological order using language such*

subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = * - 9 (copied from Addition and Subtraction) *represent and use number bonds and related subtraction facts within 20* (copied from Addition and Subtraction)		*as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening* (copied from Measurement)

Measurement

Comparing and Estimating	Measuring and Calculating	Telling the Time	Converting
compare, describe and solve practical problems for: * **lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]** * **mass/weight [e.g. heavy/light, heavier than, lighter than]** * **capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]** * **time [e.g. quicker, slower, earlier, later]** sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] **Tells the time to the hour and half past the hour and draws the hands on a clock face to show these times**	measure and begin to record the following: * **lengths and heights** * **mass/weight** * **capacity and volume** * **time** (hours, minutes, seconds**)** * recognise and know the value of different denominations of **coins and notes**	tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. recognise and use language relating to dates, including days of the week, weeks, months and years	

Geometry: Properties of Shapes			
Identifying Shapes and Their Properties	**Drawing and Constructing**	**Comparing and Classifying**	**Angles**
recognise and name common 2-D and 3-D shapes, including: * **2-D shapes [e.g. rectangles (including squares), circles and triangles]** * **3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].**			

Geometry: Position and Direction	
Position, Direction and Movement	**Pattern**
describe position, direction and movement, including half, quarter and three-quarter turns.	

Statistics	
Interpreting, Constructing and Presenting Data	**Solving Problems**

Maths curriculum Overview – Year 2

Number and Place Value

Counting	Comparing Numbers	Identifying, Representing and Estimating Numbers	Reading and Writing Numbers (Including Roman Numerals)	Understanding Place Value	Rounding	Problem Solving
count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	**compare and order numbers from 0 up to 100** **use <, > and = signs correctly**	identify, represent and estimate numbers using different representations, including the number line	read and write numbers to at least 100 in numerals and in words	recognise the place value of each digit in a two-digit number (tens, ones)		**use place value and number facts to solve problems**

Number: Addition And Subtraction

Number Bonds	Mental Calculation	Written Methods	Inverse Operations, Estimating and Checking Answers	Problem Solving
recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	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 show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot		recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	**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** *solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change* (copied from Measurement)

Number: Multiplication and Division						
Multiplication & Division Facts	**Mental Calculation**	**Written Calculation**	**Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers**	**Order of Operations**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value) **recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers**	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs				**solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts**

Number: Fractions (including decimals and percentages)									
Counting in Fractional Steps	**Recognising Fractions**	**Comparing Fractions**	**Comparing Decimals**	**Rounding Including Decimals**	**Equivalence (Including Fractions, Decimals and Percentages)**	**Addition and Subtraction of Fractions**	**Multiplication and Division of Fractions**	**Multiplication and Division of Decimals**	**Problem Solving**
Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)	**recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity**				write simple fractions e.g. $^{1}/_{2}$ of 6 = 3 and recognise the equivalence of $^{2}/_{4}$ and $^{1}/_{2}$.				

Algebra

EQUATIONS	FORMULAE	SEQUENCES
recognise and use the inverse relationship between addition and subtraction and use this to check calculations and ***missing number*** *problems.* (copied from Addition and Subtraction) *recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100* (copied from Addition and Subtraction)		*compare and sequence intervals of time* (copied from Measurement) *order and arrange combinations of mathematical objects in patterns* (copied from Geometry: position and direction)

Measurement

Comparing and Estimating	Measuring and Calculating	Telling the Time	Converting
compare and order lengths, mass, volume/capacity and record the results using >, < and = compare and sequence intervals of time	choose and use appropriate standard units to estimate and measure **length/height** in any direction (m/cm); **mass** (kg/g); **temperature** (°C); **capacity** (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels recognise and use symbols for pounds **(£) and pence (p)**; combine amounts to make a particular value find different combinations of coins that equal the same amounts of money **solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change**	tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)	know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)

Geometry: Properties of Shapes

Identifying Shapes and Their Properties	Drawing and Constructing	Comparing and Classifying	Angles
identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]		**compare and sort common 2-D and 3-D shapes and everyday objects**	

Geometry: Position and Direction

Position, Direction and Movement	Pattern
use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)	order and arrange combinations of mathematical objects in patterns and sequences

Statistics

Interpreting, Constructing and Presenting Data	Solving Problems
interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity **ask and answer questions about totalling and comparing categorical data**	

Maths curriculum Overview – Year 3

Number and Place Value						
Counting	**Comparing Numbers**	**Identifying, Representing and Estimating Numbers**	**Reading and Writing Numbers (Including Roman Numerals)**	**Understanding Place Value**	**Rounding**	**Problem Solving**
count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	compare and order numbers up to 1000 **Can work out if a given number is greater or less than ten or one hundred**	identify, represent and estimate numbers using different representations	read and write numbers up to 1000 in numerals and in words *tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks* (copied from Measurement)	**recognise the place value of each digit in a three-digit number (hundreds, tens, ones)**		**solve number problems and practical problems involving these ideas.**

Number: Addition and Subtraction				
Number Bonds	**Mental Calculation**	**Written Methods**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
	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

Number: Multiplication and Division

Multiplication & Division Facts	Mental Calculation	Written Calculation	Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers	Order of Operations	Inverse Operations, Estimating and Checking Answers	Problem Solving
count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value) **recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables**	**write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods** (appears also in Written Methods)	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods)			*estimate the answer to a calculation and use inverse operations to check answers* (copied from Addition and Subtraction)	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Number: Fractions (including decimals and percentages)

Counting in Fractional Steps	Recognising Fractions	Comparing Fractions	Comparing Decimals	Rounding Including Decimals	Equivalence (Including Fractions, Decimals and Percentages)	Addition and Subtraction of Fractions	Multiplication and Division of Fractions	Multiplication and Division of Decimals	Problem Solving
count up and down in tenths	**recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with**	compare and order unit fractions, and fractions with the same denominators			**recognise and show, using diagrams, equivalent fractions with small denominators**	add and subtract fractions with the same denominator within one whole (e.g. $^{5}/_{7}$			solve problems that involve all of the year 3 concepts within fractions

	small denominators recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators					+ $^{1}/_{7} = {}^{6}/_{7}$)			

Algebra

Equations	Formulae	Sequences
solve problems, *including **missing number** problems, using number facts, place value, and more complex addition and subtraction.* (copied from Addition and Subtraction) *solve problems, including **missing number** problems, involving multiplication and division, including integer scaling* (copied from Multiplication and Division)		

Measurement

Comparing and Estimating	Measuring and Calculating	Telling the Time	Converting
compare durations of events, for example to calculate the time taken by particular events or tasks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)	**measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)** measure the **perimeter** of simple 2-D shapes **add and subtract amounts of money to give change, using both £ and p in practical contexts**	**tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks** estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)	know the number of seconds in a minute and the number of days in each month, year and leap year

Geometry: Properties of Shapes

Identifying Shapes and Their Properties	Drawing and Constructing	Comparing and Classifying	Angles
	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them		recognise angles as a property of shape or a description of a turn **identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle** identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Geometry: Position and Direction

Position, Direction and Movement	Pattern

Statistics

Interpreting, Constructing and Presenting Data	Solving Problems
interpret and present data using bar charts, pictograms and tables	solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and

	tables.

Maths curriculum Overview – Year 4

Number and Place Value						
Counting	**Comparing Numbers**	**Identifying, Representing and Estimating Numbers**	**Reading and Writing Numbers (Including Roman Numerals)**	**Understanding Place Value**	**Rounding**	**Problem Solving**
count backwards through zero to include negative numbers **count in multiples of 6, 7, 9, 25 and 1000** find 1000 more or less than a given number	**order and compare numbers beyond 1000** *compare numbers with the same number of decimal places up to two decimal places* (copied from Fractions)	identify, represent and estimate numbers using different representations	read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) *find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths* (copied from Fractions)	**round any number to the nearest 10, 100 or 1 000** *round decimals with one decimal place to the nearest whole number* (copied from Fractions)	solve number and practical problems that involve all of the above and with increasingly large positive numbers

Number: Addition and Subtraction				
Number Bonds	**Mental Calculation**	**Written Methods**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
		add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	estimate and use inverse operations to check answers to a calculation	**solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why**

Number: Multiplication and Division						
Multiplication & Division Facts	**Mental Calculation**	**Written Calculation**	**Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers**	**Order of Operations**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
count in multiples of 6, 7, 9, 25 and 1 000 (copied from Number and Place Value) **recall multiplication and division facts for multiplication tables up to 12 × 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 calculations (appears also in Properties of Numbers)	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	recognise and use factor pairs and commutativity in mental calculations (repeated)		*estimate and use inverse operations to check answers to a calculation* (copied from Addition and Subtraction)	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

Number: Fractions (including decimals and percentages)									
Counting in Fractional Steps	**Recognising Fractions**	**Comparing Fractions**	**Comparing Decimals**	**Rounding Including Decimals**	**Equivalence (Including Fractions, Decimals and Percentages)**	**Addition and Subtraction of Fractions**	**Multiplication and Division of Fractions**	**Multiplication and Division of Decimals**	**Problem Solving**
count up and down in hundredths	**recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten**		compare numbers with the same number of decimal places up to two decimal places	**round decimals with one decimal place to the nearest whole number**	**recognise and show, using diagrams, families of common equivalent fractions** recognise and write decimal equivalents of	add and subtract fractions with the same denominator		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	solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities,

					any number of tenths or hundredths recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$				including non-unit fractions where the answer is a whole number **solve simple measure and money problems involving fractions and decimals to two decimal places.**

Algebra

Equations	Formulae	Sequences
	Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. *(Copied from NSG measurement)*	

Measurement

Comparing and Estimating	Measuring and Calculating	Telling the Time	Converting
estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	estimate, compare and calculate **different measures,** including **money in pounds and pence** (appears also in Comparing) measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares	read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting) solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)	**convert between different units of measure (e.g. kilometre to metre; hour to minute)** read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting) solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)

Geometry: Properties of Shapes			
Identifying Shapes and Their Properties	**Drawing and Constructing**	**Comparing and Classifying**	**Angles**
identify lines of symmetry in 2-D shapes presented in different orientations	complete a simple symmetric figure with respect to a specific line of symmetry	**compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes**	identify acute and obtuse angles and compare and order angles up to two right angles by size
Geometry: Position and Direction			
Position, Direction and Movement		**Pattern**	
describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down **plot specified points and draw sides to complete a given polygon**			
Statistics			
Interpreting, Constructing and Presenting Data		**Solving Problems**	
interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs		**solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.**	

Maths curriculum Overview – Year 5

Number and Place Value						
Counting	**Comparing Numbers**	**Identifying, Representing and Estimating Numbers**	**Reading and Writing Numbers (Including Roman Numerals)**	**Understanding Place Value**	**Rounding**	**Problem Solving**
interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	**read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit** (appears also in Reading and Writing Numbers)		read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers) read Roman numerals to 1000 (M) 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 (appears also in Reading and Writing Numbers) *recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents* (copied from Fractions)	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 *round decimals with two decimal places to the nearest whole number and to one decimal place* (copied from Fractions)	solve number problems and practical problems that involve all of the above

Number: Addition and Subtraction				
Number Bonds	**Mental Calculation**	**Written Methods**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
	add and subtract numbers mentally with increasingly large numbers eg 12,462 – 2,300 – 10, 162	**add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)**	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 why

Number: Multiplication and Division						
Multiplication & Division Facts	**Mental Calculation**	**Written Calculation**	**Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers**	**Order of Operations**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)	multiply and divide numbers mentally drawing upon known facts multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	**identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.** know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})			**solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes** solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates**

Number: Fractions (including decimals and percentages)									
Counting in Fractional Steps	**Recognising Fractions**	**Comparing Fractions**	**Comparing Decimals**	**Rounding Including Decimals**	**Equivalence (Including Fractions, Decimals and Percentages)**	**Addition and Subtraction of Fractions**	**Multiplication and Division of Fractions**	**Multiplication and Division of Decimals**	**Problem Solving**
	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	**compare and order fractions whose denominators are all multiples of the same number**	**read, write, order and compare numbers with up to three decimal places**	round decimals with two decimal places to the nearest whole number and to one decimal place	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths **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 recognise the per cent	add and subtract fractions with the same denominator and multiples of the same number recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^{2}/_{5} + ^{4}/_{5} = ^{6}/_{5} = 1^{1}/_{5}$)	multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams		solve problems involving numbers up to three decimal places **solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and those with a denominator of a multiple of 10 or 25.**

					symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal fraction				

Algebra

Equations	Formulae	Sequences
*use the properties of rectangles to deduce related facts and find **missing lengths and angles*** (copied from Geometry: Properties of Shapes)		

Measurement

Comparing and Estimating	Measuring and Calculating	Telling the Time	Converting
calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) (also included in measuring) estimate the area of irregular shapes estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	use all four operations to solve problems involving measure (e.g. **length, mass, volume, money**) using decimal notation including scaling. **measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	solve problems involving converting between units of time	**convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)** solve problems involving converting between units of time understand and use equivalences between metric units and common imperial units such as inches, pounds and pints

	recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) (copied from Multiplication and Division)		

Geometry: Properties of Shapes

Identifying Shapes and Their Properties	Drawing and Constructing	Comparing and Classifying	Angles
identify 3-D shapes, including cubes and other cuboids, from 2-D representations	**draw given angles, and measure them in degrees (^{o})**	use the properties of rectangles to deduce related facts and find missing lengths and angles **distinguish between regular and irregular polygons based on reasoning about equal sides and angles**	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles identify: * angles at a point and one whole turn (total 360^o) * angles at a point on a straight line and ½ a turn (total 180^o) * other multiples of 90^o

Geometry: Position and Direction

Position, Direction And Movement	Pattern
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	

Statistics

Interpreting, Constructing And Presenting Data	Solving Problems
complete, read and interpret information in tables, including timetables	solve comparison, sum and difference problems using information presented in a line graph

Maths curriculum Overview – Year 6

Number and Place Value						
Counting	**Comparing Numbers**	**Identifying, Representing and Estimating Numbers**	**Reading and Writing Numbers (Including Roman Numerals)**	**Understanding Place Value**	**Rounding**	**Problem Solving**
use negative numbers in context, and calculate intervals across zero	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)		read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) *identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places* (copied from Fractions)	**round any whole number to a required degree of accuracy** *solve problems which require answers to be rounded to specified degrees of accuracy* (copied from Fractions)	solve number and practical problems that involve all of the above

Number: Addition and Subtraction				
Number Bonds	**Mental Calculation**	**Written Methods**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
	perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations involving the four operations		**use estimation 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 why** Solve problems involving addition, subtraction, multiplication and division

Number: Multiplication and Division						
Multiplication & Division Facts	**Mental Calculation**	**Written Calculation**	**Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers**	**Order of Operations**	**Inverse Operations, Estimating and Checking Answers**	**Problem Solving**
	perform mental calculations, including with mixed operations and large numbers *associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)* (copied from Fractions)	**multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication** **divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context** 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	identify common factors, common multiples and prime numbers *use common factors to simplify fractions; use common multiples to express fractions in the same denomination* (copied from Fractions) *calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3* (copied from Measures)	use their knowledge of the order of operations to carry out calculations involving the four operations	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy	solve problems involving addition, subtraction, multiplication and division *solve problems involving similar shapes where the scale factor is known or can be found* (copied from Ratio and Proportion)

		rounding, as appropriate for the context *use written division methods in cases where the answer has up to two decimal places* (copied from Fractions (including decimals))							

Number: Fractions (including decimals and percentages)

Counting in Fractional Steps	Recognising Fractions	Comparing Fractions	Comparing Decimals	Rounding Including Decimals	Equivalence (Including Fractions, Decimals and Percentages)	Addition and Subtraction of Fractions	Multiplication and Division of Fractions	Multiplication and Division of Decimals	Problem Solving
		compare and order fractions, including fractions >1	identify the value of each digit in numbers given to three decimal places	**solve problems which require answers to be rounded to specified degrees of accuracy**	use common factors to simplify fractions; use common multiples to express fractions in the same denomination associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple	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. $^1/_4 \times {}^1/_2 = {}^1/_8$) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$)	multiply one-digit numbers with up to two decimal places by whole numbers multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100	

					fraction (e.g. $^{3}/_{8}$) **recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.**			and 1000 where the answers are up to three decimal places associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$) **use written division methods in cases where the answer has up to two decimal places**	

Ratio and Proportion

solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

solve problems involving similar shapes where the scale factor is known or can be found

solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Algebra

Equations	Formulae	Sequences
express missing number problems algebraically find pairs of numbers that satisfy number sentences involving two unknowns enumerate all possibilities of combinations of two variables	**use simple formulae** *recognise when it is possible to use **formulae** for area and volume of shapes* (copied from Measurement	generate and describe linear number sequences

Measurement			
Comparing and Estimating	**Measuring and Calculating**	**Telling the Time**	**Converting**
calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.	solve problems involving the calculation and conversion of **units of measure**, using decimal notation up to three decimal places where appropriate (appears also in Converting) recognise that shapes with the same areas can have different **perimeters** and vice versa 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]. recognise when it is possible to use formulae for area and volume of shapes		**use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places** solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating) convert between miles and kilometres
Geometry: Properties of Shapes			
Identifying Shapes and Their Properties	**Drawing and Constructing**	**Comparing and Classifying**	**Angles**
recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing) illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)	**compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons**	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Geometry: Position and Direction	
Position, Direction And Movement	**Pattern**
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.**	
Statistics	
Interpreting, Constructing And Presenting Data	**Solving Problems**
interpret and construct pie charts and line graphs and use these to solve problems	**calculate and interpret the mean as an average**