



Chapelford Village Primary School

Long Term Subject Progression Overview

Subject: Maths

Subject Lead: Mrs Stewart, Mrs Astley and Miss Rawcliffe

Year Group	Area of Learning	Knowledge	Skills	Vocabulary (Tier 2 and 3)
Early Years	Number	<ul style="list-style-type: none"> Say how many there are after counting - for example, "...6, 7, 8. There are 8 balls". This is the cardinal counting principle. Say how many there might be before you count to give a purpose to counting. Sing counting songs and number rhymes and read stories that involve counting. Be familiar with the tens structure of the number system. Play card games such as snap or matching pairs with cards where some have numerals, and some have dot arrangements. Discuss the different ways children might record quantities (for example, scores in games), such as tallies, dots and using numeral cards. Count verbally beyond 20, pausing at each multiple of 10 to draw out the structure. Be familiar with two-digit numbers and start to spot patterns within them. Compare. Include more small things and fewer large things, spread them out and bunch them up, to draw attention to the number not the size of things or the space they take up. Include groups where the number of items is the same. Make predictions about what the outcome will be in stories, rhymes and songs if one is added, or if one is taken away. Represent 'staircase' patterns which show that the next counting number includes the previous number plus one. 	<ul style="list-style-type: none"> Develop the key skills of counting objects including saying the numbers in order and matching one number name to each item. Show small quantities in familiar patterns (for example, dice) and random arrangements. Count out a smaller number from a larger group: "Give me seven..." Knowing when to stop shows that children understand the cardinal principle. Play games which involve counting. Play games which involve quickly revealing and hiding numbers of objects. Build counting into everyday routines such as register time, tidying up, lining up or counting out pieces of fruit at snack time. Subitise first when enumerating groups of up to 4 or 5 objects: "I don't think we need to count those. They are in a square shape so there must be 4." Count to check. Encourage children to show a number of fingers 'all at once', without counting. Put objects into five frames and then ten frames Display numerals in order alongside dot quantities or tens frame arrangements Distribute items evenly, for example: "Put 3 in each bag," or give the same number of pieces of fruit to each child Use vocabulary: 'more than', 'less than', 'fewer', 'the same as', 'equal to'. Encourage children to use these words as well. 	Number zero number one, two, three ... to twenty and beyond teens numbers, eleven, twelve ... twenty none how many ...? count, count (up) to, count on (from, to), count back (from, to) count in ones, twos, fives, tens is the same as more, less odd, even few pattern pair Place value ones tens digit the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more one less, ten less compare order size first, second, third... twentieth last, last but one before, after next between Estimating guess how many ...? estimate nearly close to

		<ul style="list-style-type: none"> • Conceptual subitising: "Well, there are three here and three here, so there must be six." • Emphasise the parts within the whole: "There were 8 eggs in the incubator. Two have hatched and 6 have not yet hatched." • Have a sustained focus on each number to and within 5. 	<ul style="list-style-type: none"> • Play games which involve partitioning and recombining sets. For example, throw 5 beanbags, aiming for a hoop. How many go in and how many don't? • Learn number bonds through lots of hands-on experiences of partitioning and combining numbers in different contexts and seeing subitising patterns. 	<p>about the same as just over, just under too many, too few enough, not enough add, more, and make, sum, total altogether double one more, two more ... ten more how many more to make ...? how many more is ... than ...? how much more is ...? take away how many are left/left over? how many have gone? one less, two less, ten less ... how many fewer is ... than ...? how much less is ...? difference between</p>
	<p>Numerical patterns</p>	<ul style="list-style-type: none"> • Investigate how shapes can be combined to make new shapes • Predict what shapes they will make when paper is folded. • Make a deliberate mistake and discuss how to fix it. 	<ul style="list-style-type: none"> • Copy increasingly complex 2D pictures and patterns with 3D resources, guided by knowledge of learning trajectories • Solve a range of jigsaws of increasing challenge. • Find 2D shapes within 3D shapes, including through printing or shadow play. • Continue patterns with varying rules (including AB, ABB and ABBC) and objects. • Use comparative language eg 'than'. For example: "This is heavier than that." • Ask children to make and test predictions. • 	<p>sharing doubling halving number patterns count, sort group, set list, tally pattern puzzle what could we try next? how did you work it out? recognise describe draw compare sort</p>
	<p>Shape, Space and measures</p>	<ul style="list-style-type: none"> • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. 	<ul style="list-style-type: none"> • Compare length, weight and capacity • Select, rotate and manipulate shapes to develop spatial reasoning skills. • Continue, copy and create repeating patterns. 	<p>Measure, size, Compare, guess, estimate, enough, not enough too much, too little, too many, too few, nearly, close to, about the same as, just over, just under Length Metre, length, height, width, depth, long, short, tall, high, low, wide, narrow, thick, thin, longer, shorter, taller, higher ... and so on, longest, shortest, tallest, highest ... and so on, far, near, close Weight weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales Capacity and volume Full, empty, half full, Holds, container Time days of the week, Monday, Tuesday ..., day, week, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, tomorrow, before, after, next, last, now, soon, early, late, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time. hour, o'clock, clock, watch, hands Money Coin penny, pence, pound, price, cost, buy, sell, spend, spent, pay</p>

Year 1	Number and Place Value	<ul style="list-style-type: none"> 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 read and write numbers from 1 to 20 in numerals and words 	<ul style="list-style-type: none"> identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (<i>fewer</i>), most, least 	Number Numeral, twenty-one, twenty-two ... one hundred, forwards backwards, equal to equivalent to, most, least Place value equal to, half-way between above, below Estimating roughly
	Addition, Subtraction, Multiplication and Division	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = - 9$ 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 	Addition, near double half, halve, subtract, equals is the same as number bonds/pairs missing number multiplication multiply multiplied by multiple division dividing grouping array
	Fractions	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> identify a range of turns in a range of contexts 	fraction equal part equal grouping equal sharing one of two equal parts one of four equal parts
	Geometry: Properties of Shape	<ul style="list-style-type: none"> recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. 	<ul style="list-style-type: none"> Identify a range of 2-D and 3-D shapes in different contexts (eg real life) 	Symmetry Symmetrical pattern 2-D shape point, pointed 3-D shape cuboid cylinder
	Geometry: Position and Direction	<ul style="list-style-type: none"> describe position, direction and movement, including whole, half, quarter and three quarter turns 	<ul style="list-style-type: none"> apply position, direction and movement of turns to a range of problems 	Underneath Centre Journey quarter turn, three-quarter turn
	Measurement	<ul style="list-style-type: none"> compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] mass/weight [for example, heavy/light, heavier than, lighter than] capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] time [for example, quicker, slower, earlier, later] 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 recognise and use language relating to dates, including days of the week, weeks, months and years tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 	<ul style="list-style-type: none"> sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] 	Measurement Roughly Length Centimetre ruler metre stick Weight kilogram, half kilogram Capacity and volume litre, half litre capacity volume, more than less than, quarter , full Time months of the year (January, February ...) seasons: spring, summer, autumn, winter weekend, month, year, earlier, later first

				<p>midnight date, how long ago? how long will it be to ...? how long will it take to ...? how often? always, never, often, sometimes, usually once, twice, half past, quarter past, quarter to clock face, hour hand, minute hand hours, minutes Money change dear, costs more cheap, costs less, cheaper costs the same as how much ...? how many ...? total</p>
Year 2	Number and Place Value	<ul style="list-style-type: none"> count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward recognise the place value of each digit in a two-digit number (tens, ones) 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 	<ul style="list-style-type: none"> compare and order numbers from 0 up to 100; use and = signs use place value and number facts to solve problems. 	<p>Number two hundred ... one thousand, tally, sequence continue predict, rule > greater than < less than, hundreds one-, two- or three-digit number place, place value stands for, represents exchange, twenty-first, twenty-second ..., count in threes, fours and so on Estimating Exact, exactly divide, divided by, divided into share, share equally left, left over one each, two each, three each ... ten each group in pairs, threes ... tens equal groups of, row, column multiplication table multiplication fact, division fact</p>
	Addition, Subtraction, Multiplication and Division	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot 	<ul style="list-style-type: none"> solve problems with addition and subtraction: <ul style="list-style-type: none"> using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	<p>100 more/ less, facts Tens boundary groups of times once, twice, three times ... ten times repeated addition divide, divided by, divided into, share, share equally left, left over one each, two each, three each ... ten each group in pairs, threes ... tens equal groups of, row, column. multiplication table multiplication fact, division fact</p>

	Fractions	<ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{3}{4}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{4}{4}$ of a length, shape, set of objects or quantity write simple fractions for example, $2\frac{1}{6} = \frac{13}{6}$ 	<ul style="list-style-type: none"> recognise the equivalence of $\frac{4}{2}$ and $2\frac{1}{1}$. 	equivalent fraction mixed number numerator, denominator, two halves, two quarters, three quarters, one third, two thirds one of three equal parts
	Geometry: Properties of Shape	<ul style="list-style-type: none"> 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] 	<ul style="list-style-type: none"> compare and sort common 2-D and 3-D shapes and everyday objects 	Surface Line of symmetry 2-D shape Rectangular circular triangular pentagon hexagon octagon
	Geometry: Position and Direction	<ul style="list-style-type: none"> use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). 	<ul style="list-style-type: none"> order and arrange combinations of mathematical objects in patterns and sequences 	Route, higher, lower, clockwise, anticlockwise, right angle straight line
	Measurement	<ul style="list-style-type: none"> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$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 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 	<ul style="list-style-type: none"> compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ 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 compare and sequence intervals of time 	Measuring scales Contains Temperature temperature degree Time Fortnight 5, 10, 15 ... minutes past, digital/analogue clock/watch, timer seconds duration Money Bought sold
	Statistics	<ul style="list-style-type: none"> recognise the elements of pictograms, tally charts, block diagrams and simple tables 	<ul style="list-style-type: none"> 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. 	graph, block graph, pictogram represent label, title most popular, most common least popular, least common
Year 3	Number and Place Value	<ul style="list-style-type: none"> count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number recognise the place value of each digit in a three-digit number (hundreds, tens, ones) identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words 	<ul style="list-style-type: none"> compare and order numbers up to 1000 solve number problems and practical problems involving these ideas. 	Number Count in eights, fifties and so on to hundreds, factors of, relationships, Roman Numerals, Estimating approximate, approximately, Place Value round, nearest, round to the nearest ten, hundred round up, round down
	Addition, Subtraction, Multiplication and Division	<ul style="list-style-type: none"> add and subtract numbers mentally, including: <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve problems, including missing number problems, using number facts, place value, and more complex 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. 	Hundred boundary inverse factor Product remainder inverse

		<ul style="list-style-type: none"> recall and use multiplication and division facts for the 3, 4 and 8 multiplication table 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 		
	Fractions	<ul style="list-style-type: none"> 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 fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole [for example, $7\ 5 + 7\ 1 = 7\ 6$] 	<ul style="list-style-type: none"> compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the knowledge 	sixths, sevenths, eighths, tenths ...
	Geometry: Properties of Shape	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them 	Perimeter 2-D shape pentagonal hexagonal octagonal quadrilateral right-angled parallel, perpendicular 3-D shape hemisphere prism, triangular prism
	Measurement	<ul style="list-style-type: none"> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) measure the perimeter of simple 2-D shape 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 know the number of seconds in a minute and the number of days in each month, year and leap year 	<ul style="list-style-type: none"> estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight compare durations of events [for example to calculate the time taken by particular events or tasks]. 	Division Approximately Length Millimetre, mile kilometre, distance apart ... between ... to ... from Perimeter Temperature Centigrade Time Century, calendar, earliest, latest, a.m, p.m, Roman numeral, 12-hour clock time, 24-hour clock time
	Statistics	<ul style="list-style-type: none"> Recognise the elements of bar charts, pictograms and tables 	<ul style="list-style-type: none"> interpret and present data using bar charts, pictograms and tables solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. 	chart, bar chart, frequency table Carroll diagram, Venn diagram axis, axes diagram
Year 4	Number and Place Value	<ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number count backwards through zero to include negative numbers recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) identify, represent and estimate numbers using different 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 to include the concept of zero and place value 	<ul style="list-style-type: none"> order and compare numbers beyond 1000 solve number and practical problems that involve all of the above and with increasingly large positive numbers 	Number ten thousand, hundred thousand, million, count in sixes, sevens, nines, twenty-fives, next, consecutive integer, positive, negative above/below zero, minus negative numbers Place Value One thousand more/less Estimating Round to nearest thousand

	Addition, Subtraction, Multiplication and Division	<ul style="list-style-type: none"> Use a formal written method to: <ul style="list-style-type: none"> Add numbers up to 4 digits Subtract numbers up to 4 digits Multiply 2 and 3 digit numbers by a 1-digit number When appropriate - the introduction of division 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 	<ul style="list-style-type: none"> 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. 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. 	square, squared cube, cubed
	Fractions and Decimals	<ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. add and subtract fractions with the same denominator recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $4 \frac{1}{10}$, $2 \frac{1}{10}$, $4 \frac{3}{10}$ 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 	<ul style="list-style-type: none"> solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number 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. 	hundredths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion
	Geometry: Properties of Shape	<ul style="list-style-type: none"> 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 identify lines of symmetry in 2-D shapes presented in different orientations 	<ul style="list-style-type: none"> complete a simple symmetric figure with respect to a specific line of symmetry. 	Line, construct, sketch, centre, angle, right-angled base, square-based reflect, reflection regular, irregular 2-D shape 2-D, two-dimensional oblong Rectilinear, equilateral triangle, isosceles triangle, scalene triangle, heptagon, parallelogram, rhombus, trapezium polygon 3-D shape 3-D, three-dimensional, Spherical, cylindrical tetrahedron, polyhedron
	Geometry: Position and Direction	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> plot specified points and draw sides to complete a given polygon. 	North-east, north-west, south-east, south-west, NE, NW, SE, SW translate, translation, rotate, rotation degree reflection ruler, set square angle measurer, compass
	Measurement	<ul style="list-style-type: none"> Convert between different units of measure [for example, kilometre to metre; hour to minute] 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 	<ul style="list-style-type: none"> estimate, compare and calculate different measures, including money in pounds and pence solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. 	unit, standard unit metric unit Length Breadth, edge, area, covers square centimetre (cm ²), Weight mass: big, bigger, small, smaller weight: heavy/light, heavier/lighter, heaviest/ lightest Capacity and volume Measuring cylinder Time Leap year, millennium, noon, date of birth, timetable, arrive, depart
	Statistics	<ul style="list-style-type: none"> Understand the elements of bar charts, time graphs and pictograms. 	<ul style="list-style-type: none"> interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. 	survey, questionnaire, data

			<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. 	
Year 5	Number and Place Value	<ul style="list-style-type: none"> Read and write numbers up to 1 000 000 and determine the value of each digit including negative numbers count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 read Roman numerals to 1000 (M) and recognise years written in Roman numerals 	<ul style="list-style-type: none"> Order and compare numbers up to 1 000 000 interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero solve number problems and practical problems that involve all of the above To apply knowledge of rounding in context (money etc) 	Number Factor, pair, \geq greater than or equal to \leq less than or equal to, formula divisibility square number prime number ascending/descending order Estimating Round to nearest ten thousand
	Addition, Subtraction, Multiplication and Division	<ul style="list-style-type: none"> Use a formal written method to: Add numbers up to 1,000,000 (including decimals) Subtract numbers up to 1,000,000 (including decimals) Multiply 4 digit numbers by 2 digit numbers Divide 4 digit numbers by 1 digit numbers Identify common factors, common multiples and prime numbers (up to 100) Perform mental calculations drawing upon known facts Multiply and divide whole number and those involving decimals by 10, 100 and 1,000 know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers recognise and use square numbers and cube numbers, and the notation for squared (2^2) and cubed (3^3) 	<ul style="list-style-type: none"> 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 	Ones boundary, tenths boundary
	Fractions, Decimals and Percentages	<ul style="list-style-type: none"> Understand the value of a fraction within the number system identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper fractions add and subtract fractions with the same denominator and denominators that are multiples of the same number multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] 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 recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal read and write numbers with up to three decimal places 	<ul style="list-style-type: none"> compare and order fractions whose denominators are all multiples of the same number convert from one form to the other (mixed numbers and improper fractions) and write mathematical statements > 1 as a mixed number [for example, $5 \frac{2}{5} + 5 \frac{4}{5} = 10 \frac{6}{5}$] order and compare numbers with up to three decimal places solve problems involving number up to three decimal places solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{5}$, $\frac{1}{4}$ and those fractions with a denominator of a multiple of 10 or 25. 	proper/improper fraction, equivalent, reduced to, cancel, thousandths, in every, for every percentage, per cent, %
	Geometry: Properties of Shape	<ul style="list-style-type: none"> identify 3-D shapes, including cubes and other cuboids, from 2-D representations know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees ($^\circ$) identify: angles at a point and one whole turn (total 360°) angles at a point on a straight line and $2 \frac{1}{2}$ a turn (total 180°) other multiples of 90° 	<ul style="list-style-type: none"> 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. 	radius, diameter, congruent, axis of symmetry, reflective symmetry 2-D shape x-axis, y-axis, quadrant 3-D shape octahedron
	Geometry: Position and Direction	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> use translations and reflections to solve a range of problems 	Coordinate protractor
	Measurement	<ul style="list-style-type: none"> convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) 	<ul style="list-style-type: none"> calculate and compare the area of rectangles (including squares), and 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 	imperial unit Length square metre (m^2), square millimetre (mm^2)

		<ul style="list-style-type: none"> understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate the area of rectangles estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] 	<ul style="list-style-type: none"> use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. 	Capacity and volume Pint, gallon Money discount currency
	Statistics	<ul style="list-style-type: none"> Recognise the elements of line graphs and timetables 	<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables 	Database Bar line chart Line graph maximum/minimum value outcome
Year 6	Number and Place Value	<ul style="list-style-type: none"> Read and write numbers up to 10 000 000 and determine the value of each digit including negative numbers Round any whole number to a required degree of accuracy 	<ul style="list-style-type: none"> Order and compare numbers up to 10 000 000 Use negative numbers in context, and calculate intervals across zero To apply knowledge of rounding in context (money etc) Solve number and practical problems that involve all of the above 	Number factorise prime factor order digit total
	Addition, Subtraction Multiplication and Division	Use a formal written method to: <ul style="list-style-type: none"> Add numbers up to 10,000,000 (including decimals) Subtract numbers up to 10,000,000 (including decimals) Multiply 4 digit numbers by 2 digit numbers (including decimals) Divide 4 digit numbers by 2 digit numbers (including decimals) Identify common factors, common multiples and prime numbers Perform mental calculations 	<ul style="list-style-type: none"> Multiply multi-digit numbers up to 4 digits by a 2-digit number Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context use their knowledge of the order of operations to carry out calculations involving the four operations perform mental calculations, including with mixed operations and large numbers solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	Composite number
	Fractions, Decimals and Percentages	<ul style="list-style-type: none"> use common factors to simplify fractions; use common multiples to express fractions in the same denomination Add, subtract, multiply and divide fractions 	<ul style="list-style-type: none"> compare and order fractions, including fractions > 1 add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions divide proper fractions by whole numbers [for example, $3 \frac{1}{2} \div 6 = \frac{1}{4}$] associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] identify the value of each digit in numbers given to three decimal places and multiply 	Nearest decimal place
	Ratio and Proportion	<ul style="list-style-type: none"> Understand what ratio means and how to find a ratio of a given amount 	<ul style="list-style-type: none"> 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 	Ratio Proportion
	Algebra	<ul style="list-style-type: none"> Use simple formulae Understand each element of algebra and their representation 	<ul style="list-style-type: none"> generate and describe linear number sequences express missing number problems algebraically find pairs of numbers that satisfy an equation with two unknowns enumerate possibilities of combinations of two variables 	Algebra formula, formulae equation unknown variable
	Geometry: Properties of Shape	<ul style="list-style-type: none"> draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. 	<ul style="list-style-type: none"> compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons 	circumference, concentric, arc net, open, closed intersecting, intersection plane 2-D shape kite 3-D shape dodecahedron net, open, closed

	Geometry: Position and Direction	<ul style="list-style-type: none"> describe positions on the full coordinate grid (all four quadrants) 	<ul style="list-style-type: none"> draw and translate simple shapes on the coordinate plane, and reflect them in the axes 	Reflex angle
	Measurement	<ul style="list-style-type: none"> use, read and write between standard units 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 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 convert between miles and kilometres calculate the area of parallelograms and triangles calculate and estimate volume of cubes and cuboids 	<ul style="list-style-type: none"> solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]. 	Length yard, foot, feet, inch, inches, circumference Weight Tonne, pound, ounce Capacity and volume centilitre cubic centimetres(cm ³), cubic metres (m ³), cubic millimetres (mm ³), cubic kilometres (km ³) Time Greenwich Mean Time, British Summer Time, International Date Line Money profit, loss
	Statistics	<ul style="list-style-type: none"> recognise the elements of a pie chart and line graphs calculate the mean as an average 	<ul style="list-style-type: none"> interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average. 	Pie chart mean (mode, median, range as estimates for this) statistics, distribution