KS2 - Year 3		
National Curriculum	**Key Performance Indicators**	**Working at Greater Depth**
Number and Place Value		
Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	• Can count in multiples of 4 and 8 and use doubling to explain the relationship between them • Can count in multiples of 50 and 100 and use doubling to explain the relationship between them • Can find 10 more or less than a given number and explain which digit changes and which stays the same • Can find 100 more or less than a given number and explain which digit changes and which stays the same	• Can explain reasoning in counting activities *e.g. if my sequence starts at 450 and increases by 50 each time I will say 945, true or false?*
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	• Can identify the number of hundreds, tens and ones in a 3-digit number • Can identify the larger of two 3-digit numbers and explain reasoning 3NPV–2 Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.	• Can solve problems involving 3-digit numbers e.*g. Given 4-digit cards what are the range of numbers between 200 and 300 that you can make? How do you know you have them all?*
Compare and order numbers up to 1000	• Can position 3-digit numbers on a number line and explain reasoning about where they are positioned 3NPV–3 Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10 3NPV–4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	• Can solve reasoning questions such as *what is the same and different about these 3-digit numbers 434, 443, 334?*

Identify, represent and estimate numbers using different representations	• Can use representations such as dienes, place value counters and money to represent 3-digit numbers 3NPV–1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.	• Can solve problems involving number *e.g. what range of 3 digit numbers can you make with a digit sum of 9?*
Read and write numbers up to 1000 in numerals and in words	• Can use understanding of numbers 1 – 100 to read and write numbers to 1000	• Can solve reasoning questions about writing numbers such as *I write the word two whilst writing a number; what is an obvious, peculiar and general number that I could have written?*
Solve number problems and practical problems involving these ideas.	• Can solve problems involving number and link to areas such as money and measure	• Can solve open ended problems involving number and link to areas such as money and measure

Addition and Subtraction		
Add and subtract numbers mentally, including A three-digit number and ones A three-digit number and tens A three-digit number and hundreds	• Can add and subtract numbers using place value and partitioning, including counting on and back on a number line • Can add and subtract multiples of 10 and compensate • Can count on to find the difference between two numbers 3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice. 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts 3AS–1 Calculate complements to 100	• Explain why the answer to addition and subtraction calculations are sometimes, always or never *true e.g. if I add a 5 to any number ending in 7, the units will always be 2.* • Use a variety of strategies to solve mental addition and subtraction calculations and explain how you have solved it.
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	• Can calculate using a formal written method for TO+TO, no bridging and with bridging • Can calculate using a formal written method for HTO+TO, no bridging and with bridging • Can calculate using a formal written method for HTO+HTO, no bridging and with bridging • Can calculate using a formal written method for TO-TO, no bridging and with bridging • Can calculate using a formal written method for HTO-TO no bridging and with bridging • Calculate using a formal written method for HTO-HTO, no bridging and with bridging. 3AS–2 Add and subtract up to three-digit numbers using columnar methods.	• Can reflect on when it is appropriate to use a standard written method for an addition and subtraction • Can fill in the missing boxes of a written addition or subtraction with and without carrying

Estimate the answer to a calculation and use inverse operations to check answers	• Use near numbers to estimate answers to a problem • Understand how to use the inverse to check answers to a calculation 3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.	• Use estimation to consider whether the solution to an addition or a subtraction is possible
Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	• Identify the correct information to solve a problem • Find missing box calculations in mental addition • Check solutions and results to see whether they are reasonable	• Solve addition and subtraction problems including those with more than one step, for numbers and measures

Multiplication and Division		
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	• Can recall the 3x table • Can recall the 4x table • Can recall the 8x table • Can use doubling to explain the relationship between the 2, 4 and 8 times tables • Can derive related division facts • Can understand that division cannot be done in any order 3NF–2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	• Can explain the relationship between multiplication facts including for multiples of 10 *e.g. Use 3 x 4 to find 30 x 40* • Can understand the meaning of division within a word problem and explain what to do in the case of a remainder
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	• Can use multiplication facts to solve TO x O using partitioning • Can use multiplication facts to solve TO x O using the grid method • Can begin to use multiplication facts to solve TO x O using a formal written method • Can use derived facts to solve problems involving division *e.g. Flowers are grown in rows of 10. There are 73 flowers. How many full rows can be planted?* • Can use mental methods or a number line to divide TO by O *e.g. For 42 ÷ 3, partition and calculate 30 ÷ 3 and 12 ÷ 3 then recombine* • Can begin to use a formal written method to divide TO by O if within school calculation policy 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts	• Can decide when it is appropriate to use either a mental or written method and explain why • Can solve open- ended multiplication *problems e.g. How many different ways could you solve 24 x 4 and which is most efficient?* • Can solve open ended division problems *e.g. How many different ways could 48 flowers be arranged to form a rectangle?*

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.	• Can solve missing box calculations relating to recall of multiplication and division facts • Can solve problems linked to scaling measures *e.g. 4 times as high* • Can solve correspondence problems such as *3 tops, 4 football shorts, how many different outfits can be made?* • Can solve division problems *e.g. 12 sweets between 3 children or 4 cakes between 8 children* 3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division.	• Can solve problems involving interpretation of multiplication facts and remainders *e.g. Last year, my age was a multiple of 4 and 2 and this year it is a multiple of 3. How old am I?* • Can solve missing box calculations relating to a written method of multiplication • Can solve open- ended problems using multiplication *e.g. Using TO x O and digits 2, 3 and 4 what range of answers can you find?*

Fractions, Decimals & Percentages		
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	• Understands tenths are dividing an object or a number into ten equal parts. • Understands tenths are 10 parts of one whole. • Can find and place tenths on a number line. • Can use tenths in money and metres • Can compare and order numbers to 1dp	• Can recognise the distance between tenths *e.g.* $\frac{2}{10}$ *and* $\frac{6}{10}$
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	• Understand the numerator and denominator in a proper fraction. • Can calculate unit fractions by dividing. • Can compare unit fractions on a number line. • Can calculate non unit fractions by dividing. 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. 3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).	• Can work out a fraction of a shape where the image is not typical. • Can reason why a decimal / fraction is placed where it is on a number line. • Can work out the whole number when given a fraction of the whole
Recognise and show, using diagrams, equivalent fractions with small denominators	• Can recognise that one whole is equivalent to two halves, three thirds, four quarters • Can work out equivalent fractions using diagrams • Can explore patterns for equivalent fractions of a half • Can explain the link between multiplication and equivalent fractions of a half	• Can pick out the odd one out from a list of fractions on and explain why. • Can predict if a fraction will belong in the sequence of equivalent fractions and explain why.

Add and subtract fractions with the same denominator within one whole	• Can identify fractions that will total 1 • Can add fractions with the same denominator up to 1. • Can subtract fractions with the same denominator within 1. 3F–4 Add and subtract fractions with the same denominator, within 1.	• Can say how much would be left of a pizza if different fractions were eaten. • Can state how many are in the full bag given a fraction of a bag
Compare and order unit fractions, and fractions with the same denominators	• Can compare and order unit fractions • Can compare and order fractions with the same denominator. 3F–3 Reason about the location of any fraction within 1 in the linear number system.	• Can place fractions on a number line between two given fractions, and another, and another and another.
Solve problems that involve all of the above.	• Can solve problems that involve all elements of the Year 3 fraction curriculum.	

Geometry: Properties of Shape		
Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	• Can describe the properties of 2D shapes, including semi-circles, using accurate language about lengths of lines and numbers of vertices • Can recognise shapes with equal side lengths • Can recognise lines of symmetry in 2D shapes • Can sort and classify collections of 2D shapes in different ways using a range of properties • Can use Venn and Carroll diagrams to classify 2D shapes • Can draw 2D shapes with the aid of modelling equipment such as geometric paper, geo boards and geo strips • Can describe the properties of 3D shapes, including hemispheres and prisms, using language such as base, face, vertex and edge • Can recognise and name 3D shapes viewed from different angles • Can recognise and name unseen 3D shapes in a feely bag • Can construct 3D shapes using matchsticks and plasticine 3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	• Can reason about 2D shapes e.g. *Use a geoboard to find as many different triangles as you can. Describe what is the same, what is different about them.* • Can identify whether statements about 3D shapes are true or false *e.g. The shape of a cross section of a sphere is always a circle.*
Recognise angles as a property of shape or a description of a turn	• Can recognise that angles are the amount of turn between two lines • Can describe properties of shapes in terms of the angles formed at vertices 3G–1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.	• Can identify a missing angle from a simple shape

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	• Can identify right angles as 90° • Can recognise that two right angles make a half turn or 180° • Can recognise that three right angles make a three quarter turn or 270° • Can recognise that four right angles make a half turn or 360° • Can identify angles less than or greater than a right angle	• Can use reasoning to convince someone that statements such as this are true: *If I turn through three quarters followed by an angle bigger than a right angle, I will have turned past my starting point.*
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	• Can identify horizontal and vertical lines • Can identify pairs of parallel lines within shapes and around them • Can identify pairs of perpendicular lines within shapes and around them G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	• Solve reasoning questions involving parallel and perpendicular lines *e.g. Identify which capital letters have both parallel and perpendicular lines. Can a letter have both?*
Geometry: Position & Direction		
No objectives in this strand for Year 3		

Measurement		
Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	• Can show something that they think is just shorter/longer than a metre/ centimetre/millimetre and can check if they are right using correct apparatus • Can say which object in the classroom is heavier than 100 g/kilogram/half-kilogram and know how to check if they are correct. • Can measure accurately in m/cm/mm; kg/g; l/ml • Can compare measures using the appropriate scale • Can read scales accurately and say what each division is worth • Can add and subtract measures • Can compare and use mixed units *e.g. 1kg and 200g* • Can work out equivalents in all areas of measure *e.g. 5m = 500cm* • Can complete simple scaling by integers (e.g. a given quantity or measure is twice as long or five times as high) and connects this to multiplication.	• Can work out the length/weight/capacity of an object from clues comparing it to other containers.
Measure the perimeter of simple 2-D shapes	• Can measure the sides of regular polygons in centimetres and millimetres and find their perimeters in centimetres and millimetres	• Can identify a missing length from a shape if given the perimeter.
Add and subtract amounts of money to give change, using both £ and p in practical contexts	• Can record using £ and p • Can add and subtract amounts of money • Can add and subtract mixed units • Can give change	• Can identify different ways to give change using a variety of coins.
Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	• Can read times in analogue format to the minute • Can read times in digital format to the minute • Can read clocks displayed using Roman numerals to the minute	• Can read a variety of analogue clock faces and describe what is the same and what is different.

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	• Can estimate how long something should take to complete • Can use vocabulary accurately: seconds, minutes, hours, o'clock, am/pm, morning, afternoon, noon and midnight • Can solve routine problems involving time using a number line	• Can work out the difference in time between two clocks
Know the number of seconds in a minute and the number of days in each month, year and leap year	• Can say how many seconds there are in a minute • Can say how many days there are in a month • Can say how many days there are in a year (including leap years)	• Can use the knowledge of seconds, minutes and days to solve problems. • Can solve problems using knowledge of days in months/months in years e.g. When looking at a ripped calendar what day would be the last day of the month?
Compare durations of events [for example to calculate the time taken by particular events or tasks].	• Can identify the finish time of an event when given the start and the duration • Can work out the difference between the start and finish time of an event. • Can work out the start time if given the duration and end timings of an event.	• Can understand which information they have in a word problem and which method they need to use to solve the problem.

Statistics		
Interpret and present data using bar charts, pictograms and tables	• Can interpret data from a pictogram when one symbol represents more than one unit • Can interpret data in graphs and understand varying scales of multiples of 2, 5 and 10 when reading values presented in bar charts • Can create a tally chart and understand that grouping in 5s helps with the accuracy and speed of counting the totals • Can transfer data from a tally chart to a table • Can create a bar chart to represent data	• Can create a pictogram, decide on the value of one unit and explain reasoning • Can decide on the scale for the axis for a bar chart and explain reasoning
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	• Can answer questions from a bar chart that involve comparison, sum and difference • Can answer questions from a pictogram that involve comparison, sum and difference • Can answer questions from a table that involve comparison, sum and difference	• Can decide how to collect and represent data in order to answer a given question • Can present a conclusion and evaluate the methods of representing the data in order to answer a given question