Maths Programme of Study – Year 3

	Autumn	Spring	Summer
Place Value and a Sense of Number	Recognise the PV of each digit in a three-digit number (hundreds, tens and ones). Find 10 more and 10 less than a given number. Count on in multiples of 2,3 and 4. Count up and down in tenths using a number line. Identify, represent and estimate numbers using different representations (100 is double 50 ~ show on a bar ~ so half of 100 is 50). Partition a three-digit number to support addition and subtraction. Find 10 or 100 more or less than a given number. Count from 0 in multiples of 4.	Compare and order numbers up to 1000. Read and write numbers up to 1000 in numerals and words. Count from 0 in multiples of 50 and 100. Count from 0 in multiples of 4 and 8. Count on from 0 in multiples of 50 and 100.	Count from 0 in multiples of 4, 8, 50 and 100. Count up and down in tenths. Generate and derive number bonds to and within 1000. Connect tenths to place value , decimal measures and to division by 10. Begin to see that decimal fractions are linked to proper fractions (such as ½ = 0.5 and 1/10 = 0.1).
Problem Solving and Reasoning	Add and subtract mentally using 'nearly numbers' and patterning 15+15=30 16+15=31 16+16=32 16+17 = ? Solve problems involving money, length and	Solve missing number problems for addition and subtraction with numbers of up to three digits. Solve missing number problems involving multiplication and division, including integer scaling problems (twice as much, half as much etc).	Solve problems that involve independently choosing a diagram or representation to support a + or – problem. Solve problems that involve independently choosing a diagram or representation to support a x or ÷ problem. Solve problems involving finding fractions

	mass. True or false: 34 is a multiple of 4 use a number line to count in 2s and then find the 4s). What is the value of the 7 in these three-digit numbers ~ 371,507, 735. Explain how you know (use Dienes). Solve problems involving addition and subtraction of money, giving change (£ and p). Solve problems involving multiples of 2,3,4,5,10 in practical contexts linked with measure.	Solve one and two step questions using information in scaled (e.g. going up in 2s)bar charts, pictograms and tables. Solve missing number problems using known number facts, with the empty box in any position in the number sentence. Use know multiplication and division facts to solve problems in context and to derive new facts for old (If I know that 3 x 4 = 12; then I know that 6 x 4 = 24 ~ using an array to explain why).	of quantities. Solve more complex addition and subtraction problems, where the strategy is not immediately obvious. Pupils should make efficient choices each time. Solve problems involving missing numbers and reasoning. If 3 x 7 = 21; then 3 x ? = 28. Use arrays to explain why.
Calculations	Addition and Subtraction Add and subtract numbers mentally (with jottings): Three-digit number and ones (362+7) Three-digit number and hundreds (362+700) ~ use base 10 materials to support and reason. Use inverses to check answers (part-whole bar model). Estimate answers using 'nearly numbers'. 51+48 is nearly 50+50 Add and subtract numbers mentally (with jottings): Three-digit number and ones (362+7), tens (362+ 30) and hundreds (362+700) ~ use base 10 materials to support and reason Multiplication and Division Recall and use multiplication and division	Addition and Subtraction Add and subtract numbers with up to three digits in a variety of informal ways, including partitioning and considering 'nearly numbers'. (395+ 406 is the same as 395 + 5 + 400 + 1). Use part- whole models (bar) to show inverse relationship. Develop a range of strategies and recordings for addition and subtraction calculations and explore which method to choose and why. Multiplication and Division Calculate mentally using multiplication tables they know. Use this to derive new facts using jottings and different representations. Link multiples to equivalent fractions. Recall and use facts for the 4x and 8x tables (x and ÷). Write and calculate mathematical statements	Addition and Subtraction Develop a range of strategies for addition and subtraction calculations and explore which method to choose and why. Add and subtract mentally (with jottings) any three digit number and ones, tens and hundreds. Add and subtract pairs of three digit numbers using informal written methods. Introduce formal column methods using Dienes and other constructions alongside the recording. Multiplication and Division Recall and use multiplication and division facts for 3,4 and 8 times tables. Independently generate multiples of 2,5 and 10.. Begin to progress towards formal written

	facts for 3x and 4x tables (use arrays and repeated addition to spot patterns to generate new facts from known facts). Recall and use multiplication and division facts for the 3x and 4x tables. Multiply and divide one digit numbers by 10 using PV reasoning. Fractions Recognise that tenths arise from dividing an object into ten equal parts (bar model). Compare and order unit fractions, and fractions with the same denominator (bar model). Find unit fractions of quantities (1/10 of 30 sweets; 1/3 of 30 marbles). Recognise and use fractions as numbers (i.e. they have a value and a place on the number line). Recognise that tenths arise from dividing an object into 10 equal parts (bar model) . Compare and order unit fractions (use a number line or other diagram).	for multiplication and division including for two-digit numbers times on-digit numbers. Fractions Recognise and show, using diagrams, equivalent fractions with small denominators (be clear about the relationship between the numerator and the denominator i.e. all halves have a denominator that is exactly 2x its numerator). Recognise and write fractions of a discrete set of objects, unit and non-unit fractions with small denominators (i.e. small groups of counting objects). Add and subtract fractions with the same denominator within one whole. **Use a bar model** (e.g $\frac{1}{6} + \frac{2}{6} = \frac{3}{6}$ and $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$).	methods using the times tables that are secure. Fractions Add and subtract fractions with the same denominator within one whole using a range of representations and in a variety of contexts. Generate equivalent fractions, using diagrams to compare and explain why they are the same. Begin to link to multiples.
Measurement	Measure the perimeter of simple 2-D shapes. Measure, compare , add and subtract lengths and mass in standard units. Measure, compare , add and subtract volume/capacity in standard units. Tell and write the time from an analogue, 12 hour, clock. Use the terms a.m. and p.m. Add and subtract money in £ and p, giving	Measure and compare mass in kg and g. Measure and compare capacity in litres and ml. 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,	Draw and measure straight lines in cms and introduce 0.5cm (5mm). Measure perimeters of rectilinear shapes (those with right angles). Add and subtract amount s of money to give change. Begin to record this in a more formal way , alongside jottings and diagrams (bar). Use both £ and p in practical contexts.

	change. Know the number of seconds in a minute. Know the number of days in each month, year and leap year. Measure and compare lengths in m, cm and mm. Begin to estimate simple measure , such as the height of a doorframe is approximately 2m. Measure the perimeter of simple 2D shapes.	minutes, hours and o'clock.. Compare the duration of events such as the time taken to complete a particular task.	Measure and compare mass/ weight. E.g.Use a simple recipe to make cup-cakes. Calculate how much of each ingredient would be needed for three times as many cup-cakes, 4x, 8x etc. Apply knowledge of volume and capacity to solve problems in practical contexts, such as which container holds more liquid the tall, narrow one or the short, wider one? Or How many ways can I build a cuboid with 36 multilink cubes?
Geometry	Draw simple 2-D shapes accurately. Identify right angles. Identify horizontal and vertical lines. Make 3-D shapes using modelling materials. Draw simple 2D shapes (quadrilaterals with a right angles, triangles with right angles), given the measurements of side lengths. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	Recognise angles as a property of shape. Identify right angles. Recognise that two right angles make a half turn (a 'straight' angle). Recognise 3D shapes in different orientations and describe them. Know that two right angles make a half turn, three make a three quarter turn and four make a complete turn. Identify whether angles are greater than or less than a right angle.	Identify lines of symmetry in simple 2-D shapes. Know when a polygon is symmetrical and when it is non-symmetrical. Describe the angle properties of shape, including introducing the terms acute and obtuse for angles.
Statistics	Interpret and present data using bar charts, pictograms and tables: Given a bar chart ; true or false "Twice as many people like plain crisps as like salt and vinegar"	Interpret and present data using bar charts, pictograms and tables.	Carry out a simple statistics project such as tallying the number of different fish in a big tank (A3 picture), creating a pictogram and a bar chart with different scales (such as 2, 5, 10). Work together to solve problems about the data, such as how much would it cost to buy all the fish in the smallest group?

			Produce a poster to show their data, charts, questions and conclusions.