Year 1: Planning for Mastery

Autumn Term

Number and place value

Fractions

Measures and statistics included in practice activities

Spring Term

Addition and subtraction

Geometry

Recap of work covered so far

Measures and statistics included in practice activities

Summer Term

Multiplication and division

Recap of all work to ensure children ready for Year 2

Measures and statistics included in practice activities

Measurement and statistics to include in number work:

- 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
- sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- 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
- simple Venn and Carroll diagrams for sorting numbers and shapes
- block charts for mental calculation strategies

	As part of starter activities, or activities in the morning maths meeting, count in steps of 1 from 0 and 1 from any number forward and backward across 100, count in multiples of 2s, 5s and 10s and in fractional steps of ½. As they count in 1s, 2s, 5s, and 10s link to odd and even numbers. Count in ordinal numbers
	Days of the week, months of the year, sequencing events in time using appropriate vocabulary
	Telling the time on a clock, focusing on o'clock and minutes past the hour in multiples of 5 linking to counting in multiples of 5

Weeks are flexible: keep going until all children have mastered the area being taught

	Number and place value	**Fractions**
Autumn Term	Consolidate single digit numbers. Use Numicon – recognise 3, 8, 10 etc. ways to make 3, 4 etc. to 10. What is their number greater/less than? Odd or even? What is one more/less? Introduce commutative and inverse exploring this e.g. 2 + 1 = 3, 1 + 2 = 3, 3 − 1 = 2, 3 − 2 = 1. Showing each number using different representations, e.g. position on a number track, Numicon shape, tower of cubes, fingers, bead string to 20, lollipop sticks, centimetres and numbers of pennies, 5p to represent 5, 5p and 1p to represent 6 (explore coins). Make displays and posters of these. Ordering and comparing, greater than, less than, equals (using symbols as described in plan). Reinforce equals as same as and equivalent to. Reinforce and rehearse 2-digit numbers to 20. Place Value: 10s and 1s, place value grids, digit cards, Gattegno charts Zero as place holder. Find one more, one less of numbers to 20. Write in numerals and words. Demonstrate tens and ones in different ways: money (10p and 1p), lollypop sticks/straws (bundle of 10 and ones), Numicon, Dienes, towers of cubes (10s in one colour and ones in another). Make displays and photographic posters. Move on to numbers to 100. Lots of different representations as above plus 100 square, blank 100 square, metre stick, 100 bead strings. One more, one less using understanding of this for single digits. Ordering and comparing, Greater than, less than, equals (using symbols as described in plan). Reinforce equals as same as and equivalent to. Practice within the context of measurement- practical activities with money, length, mass, capacity & volume.	Fractions: whole/part relationship (birds and faces), link to sharing model of division. Introduce the correct vocabulary (vinculum, denominator, numerator). Introduce the concept of area. Fractions are areas. Explore area on squared paper – shade 5 squares in different ways – same area, so same fraction, different shape. Focus on half. Explore half of numbers, square girds, quantities, time (hour), turns and shapes at the same time. Problem solving using the bar model (as in guide). Adding and subtracting halves, e.g. ½ + ½ = 1, 1 + ½ = 1 ½, 1 − ½ = ½, 1 ½ - ½ = 1, 1 ½ - 1 = ½. Use commutative and inverse facts. Start counting in steps of 4 to link to quarters / fourths. Recap half with strips and then find what happens when you halve a strip twice – quarters / fourths. Focus on quarters of different things (time, turn, shape, quantities, money, numbers etc.) Problem solving with fractions using the bar model What happens if we have two quarters – half Addition and subtraction of quarters, e.g. ¾ + ¼ = 1. What else do we know? ¼ + ¾ = 1, 1 − ¼ = ¾, 1 − ¼ = ¾

	Addition and subtraction	**Geometric Reasoning**
	Vocabulary: augend add addend = sum, minuend subtract subtrahend = difference.	
Spring Term	Focus on the development of mental calculation strategies when teaching addition and subtraction. Link addition and subtraction by doing both together. Single digits + single digits / two-digit to 20 and single / two-digits – single / two digit. Add variation by using patterns of similar calculations, e.g. 4 + 3 = 7, 4 + 4 = 8 (add 1), 4 + 5 = 9 (add 1) Use Numicon initially. Then use Dienes. Build it, draw it, talk about it and write the number statement. Strategies to begin developing: NB choose 5 or 6 of these, Year 2 teacher to rehearse and consolidate these but to work on those that have not been covered in Year 1 - YEAR 1 Number pairs for all numbers to 10. Use Numicon for this. Get children to make number pairs using cubes and recording using pictures and numerals, e.g. 3 yellow cubes and 4 blue cubes, 3 + 4 = 7. Do this with coloured squares of paper. Children make and record commutative and inverse number statements. - YEAR 1 Doubling, halving, near doubles (double 3, 3 + 4, double 5, 5 + 6) - YEAR 1 Counting on and counting back in 1s and 10s, e.g. time differences and durations in whole hours. - YEAR 1 Bridging 10 with Dienes and 100 square grids (7 + 8 = 10 + 5 or 5 + 10) - YEAR 1 Sequencing e.g. 5 + 12 by adding 10 then 2 - YEAR 2 Adding / subtracting 9 by adding 10 and adjusting - YEAR 2 Using known number facts, e.g. 3 + 4 = 7, 13 + 4 = 17 (+ 10), 6 + 8 = 14 (double all) - YEAR 1 Explore same difference, different calculation using cubes, 4 – 2, difference of 2, 5 – 3, difference of 2, 6 – 4, difference of 2 Introduce the bar model and circle model to show relationship between addition and subtraction (family of facts). Commutativity, e.g. 3 + 4 = 4 + 3, same answer different calculation. Subtraction not commutative – prove it. Check addition using subtraction. Check subtraction using addition. Missing number problems 17 = ? + 9, 7 = ? – 9. Practice finding totals and differences within context of money, length, mass, capacity, volume and time.	**3D shape:** using plasticine to make spheres, cubes and cuboids. Look at cones, cylinders, square based pyramids. Discuss properties: faces and curved surfaces, edges (where faces meet) and curved edges, vertex (where edges meet), cone: apex no vertex Shape in the environment – where in real life? Sort into Carroll and Venn diagrams. Make 3D shapes from card (just cubes or cuboids) Look at different types of pyramids (named base and triangular faces) and prisms (ends joined by rectangular faces). Identify from drawings. Explore shapes of the faces – what 2D shapes can they see? Number of sides and edges? **2D shape:** Drawing and making shapes, according to the number of sides. Develop an understanding of regular and irregular shapes. Identify them from drawings. Repeating patterns, sorting Make generalisations that all 3-sided shapes are triangles and prove it by drawing different examples. Repeat for other shapes. Introduce quadrilateral as any 4-sided shape, oblong and square are rectangles because they have 4 sides and 4 right angles. Explore right angles. Find perimeters of rectangles. **Position direction and movement** Vocabulary, whole, quarter, half and three-quarter turns – link to fractions. Lots of physically moving themselves and objects
	Last week or two of term: assessment or reinforcement and consolidation of key concepts studied so far. If necessary, make a note of areas that need more work and build these into the last half of the summer term.	

	Multiplication and division Vocabulary: multiplicand multiplied by multiplier = product, dividend divided by divisor = quotient	**Assessment**
Summer Term	Mental calculation strategies: • Tables facts for 1x, 2x, 5x and 10x. Counting in steps and learn the facts. Lots of chanting. Use clock idea • Doubling and halving • Multiplying by 5 by multiplying by 10 and halving, e.g. 4 x 5 is half of 4 x 10 Explore physical arrays, e.g. egg boxes, bun tins, chocolate bars, Connect 4 board. What do they notice? Encourage observation of repeated addition and groups of. Repeat using visuals, e.g. wrapping paper. Repeat with children's own drawings. Write repeated addition and multiplication statements. 12 counters how many different arrays? Write repeated additions and multiplication statements for each. Repeat all these for division, writing as repeated subtraction and division statements. Explore the relationship between multiplication and division. Multiplication is commutative, division is not (prove it), inverse operations. Exploration of different arrays for tables facts both multiplication and division. Explore odd and even numbers using Numicon, for multiplying by 1, 2, 5 and 10. Look at the patterns. Explore odd and even numbers. Can the children make generalisations for any of these? Scaling up and scaling down. Link to doubling and halving. Problem solving, e.g. Suzie baked 5 buns, Freddie baked 2 times as many. How many did he bake? How many more did he bake? How many altogether? Vary the number of cakes baked. Vary number of times as many. Work within the context of measure – half the mass, twice the height. Statistics: Ice cream activity using interlocking cubes. Mr Snow sells ice creams. He sells 4 flavours, strawberry (pink cubes), chocolate (brown), vanilla (white) and banana (yellow). He needs to lose one flavour. Children choose appropriate colour for the one they think he should lose. Make towers of cubes. Decide which needs to go. Draw block charts to show Mr Snow their decision. If one cube = 1, one cube = 2 and so on. Look at / make pictograms (symbols represent 2, 5 etc.) and bar graphs with divisions with in multiples of 2 and 5 etc. Linking to tables that they need to learn. Sharing model through fractions and scaling up and scaling down within the context of problem solving measures. Select those measures that have been covered less often than others. Include sharing by 5 refer to 5ths and 10 refer to 10ths.	Last half term: reinforcement and consolidation of key concepts studied so far, so that children have mastered Year 1 curriculum and are ready for Year 2. Check NC requirements for Year 1 to ensure everything has been covered particularly measurement.