Mathematics 2023- 2024 LTP & Objectives

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
	Objectives	Objectives	Objectives	Objectives	Objectives
Nursery	 0-3 Yrs Take part in finger rhymes with numbers. React to changes of amount in a group of up to three items. Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.' Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy'. Compare amounts, saying 'lots', 'more' or 'same'. Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. 3-4 Yrs Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. Understand position through words alone – for example, "The bag is under the table," –with no pointing. Discuss routes and locations, using words like 'in front of' and 'behind'. Make comparisons between objects relating to size, length, weight and capacity.		 O-3 Yrs Combine objects like stacking blocks and cups. Put objects inside others and take them out again. Climb and squeeze themselves into different types of spaces. Build with a range of resources. Complete inset puzzles Notice patterns and arrange things in patterns. Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.' 3-4 Yrs Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). Begin to recite numbers past 5. Say one number for each item in order: 1,2,3,4,5. Experiment with their own symbols and marks as well as numerals. Solve real world mathematical problems with numbers up to 5. Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc. 		0-3 Yrs Compare sizes, weights etc. using 'bigger/little/smaller', 'high/low' Notice patterns and arrange thim Extend and create ABAB patterns Say one number for each item in 3-4 Yrs Describe a familiar route. Discuss routes and locations, usin Extend and create ABAB patterns Notice and correct an error in a r Begin to describe a sequence of as 'first', 'then' Recite numbers past 5.
Reception	 Getting to know you (Assessments & Provision, RBA) Match Sort and Compare Number: Match and sort. Compare amounts Talk about Measure and Patterns SSM: Compare Size, Mass & Capacity It's me 1, 2, 3 Number: Representing 1,2,3 Composition of 1,2,3 Circles & triangles. SSM: Positional language 1,2,3,4,5 Number: Representing numbers 0-5. One more, one less. Shapes within 4 sides MSS: Shapes with 4 sides. Time 		 Alive in 5 Number: Introducing zero. Comparing numbers to 5 Composition of 4 & 5 Mass and Capacity MSS: Compare mass. Compare capacity Growing 6,7,8 Number: 6, 7 & 8 Combining two amounts. Making pairs Length, Height and time MSS: Length & height. Time Building 9 and 10 Number: Counting to 9 & 10. Comparing numbers to 10 Bonds to 10 Explore 3D shapes MSS: 3-D shapes. Spatial awareness Patterns 		 To 20 and Beyond Number: Build numbers beyond 10 Count patterns beyond 10 How many now? MSS: Spatial reasoning. Match, rotat Manipulate, compose and Number: Adding more. Taking away MSS: Spatial reasoning. Compose and Sharing and grouping Number: Sharing & grouping. Even & Number: Doubling Visualise, Build and map MSS: Spatial reasoning. Visualise and Spatial mapping. Mapping Make connections Number: Deepening understanding MSS: Patterns & relationships
Year 1	Place Value (within 10) • Sort objects. • Count objects and represent of • Count, read and write forward • Count, read and write backward • Count, read and write backward • Count one more, count one left • One to one correspondence the • Compare groups using languation left • Compare groups using languation left • Compare groups using languation left • Compare groups using languation • Compare numbers. • Order groups of objects. • Order numbers. • Ordinal numbers 1st, 2nd, 3rd • The number line.	ds from any number 0 to 10. ards from any number 0 to 10. ess. o start to compare groups. ge such as equal, more/greater,	 Count, read and write back Count one more, count one One to one correspondence 	vards from any number 0-20. wards from any number 0-20.	Multiplication and Division • Count in 2s, 5s and 10s. • Make equal groups. • Add equal groups. • Make arrays. • Make doubles. • Make equal groups - groute • Make equal groute • Find a half. • Find a quarter. • Describe turns. • Describe position.



Summer 2 Objectives

- sing gesture and language -
- ow', 'tall', 'heavy'.
- hings in patterns.
- erns and may notice errors in patterns.
- n in order: 1,2,3,4,5.

- using words like 'in front of' and 'behind'
- erns stick, leaf, stick, leaf.
- a repeating pattern.
- of events, real or fictional, using words such

10 otate, manipulate nd decompose vay and decompose en & odd

and build ng

roupings. haring.

	 Part-whole model. Additional symbol. Fact families- additional facts. Find number bonds for numbers within 10. Number bonds to 10. Compare number bonds. Addition - adding together, adding more. Finding a part. Subtraction - taking away, how many left? Crossing out, subtraction symbol, finding a part, the 8 facts, counting back. Geometry - Shape Recognise and name 2D shapes, sort 2D shapes. Recognise and name 3D shapes, not 3D shapes. Patterns with 3D and 2D shapes. 		 Find and make number bonds. Add by making 10. Subtraction - not crossing 10. Subtraction - crossing 10. Related facts. Compare number sentences. Place Value (within 50) Numbers to 50. Tens and ones. Represent numbers to 50. One more, one less. Compare objects within 50. Compare numbers within 50. Order numbers within 50. Count in 2s. Count in 5s. 		Place value (within 100) • Counting forwards and backwards within 100. • Partitioning numbers. • Comparing numbers. • Ordering numbers. • Ordering numbers. • One more, one less. Money • Recognising coins • Counting coins • Counting coins • Dates • Time to the hour, half hour • Writing time • Comparing time	
Year 2	Place Value • Recap Counting forwards and backwards within 20 • Recap Tens and ones within 20 • Recap Counting forwards and backwards within 50 (Numbers to 50)	Addition & subtraction • Fact families - addition and subtraction bonds to 20 • Check calculations • Compare number sentences • Know your bonds • Related facts • Bonds to 100 (tens)	Length and Height • Compare lengths and height • Measure length. Weight and Volume • Introduce weight and mass • Measure mass. • Compare mass. • Introduce capacity and volut • Measure capacity. • Compare capacity. • Measure capacity. • Compare capacity. • Measure capacity. • Compare capacity. • Count money - pence • Count money - pounds (notes and coins) • Count money - notes and coins	 Length & height Recap Compare lengths and heights Recap Measure lengths (1) Measure length (cm) Measure length (m) Compare lengths Order lengths 	Fractions Make equal parts Recognise a half Find a half Recognise a quarter Find a quarter Recognise a third Find a third	Statistics • Make tally charts • Make tally charts • Draw pictograms (1-1) • Interpret pictograms (1-1) • Draw pictograms (2, 5 and 10)
	 Recap Tens and ones within 50 Recap Compare numbers within 50 Count objects to 100 and read and write numbers in numerals and words Represent numbers to 100 Tens and ones with a partwhole model Tens and ones using addition Use a place value chart Compare objects Compare numbers Order objects and numbers Count in 2s Count in 10s Count in 3s 	 Add and subtract 1s 10 more and 10 less Add and subtract 10s Recap Add by making 10 Add a 2-digit and 1-digit number - crossing ten Recap Subtraction - crossing 10 Subtract a 1-digit number from a 2-digit number - crossing ten Add two 2-digit numbers - not crossing ten - add ones and add tens Add two 2-digit numbers - crossing ten - add ones and add tens Subtract a 2-digit number - from a 2-digit number - crossing ten - add ones and add tens Subtract a 2-digit number from a 2-digit number - not crossing ten Subtract a 2-digit number - not crossing ten 	 Select money Make the same amount Compare money Find the total Find the difference Find change Two-step problems Multiplication & division Recognise equal groups Make equal groups Make equal groups Add equal groups Multiplication sentences using the x symbol Multiplication sentences from pictures Use arrays Recap Make doubles 2 times-table 10 times-table 	 Four operations with lengths Problem solving with lengths Mass, Capacity and Temperature Introduce weight and mass Recap Measure mass Compare mass Measure mass in grams Measure mass in kilograms Recap Introduce capacity and volume Recap Measure capacity Compare volume Millilitres Litres Four operations with mass Four operations with volume Activity Temperature Temperature 	 Unit fractions Non-unit fractions Equivalence of a half and 2 quarters Find three quarters Count in fractions Problem solving with fractions Telling time to the hour O'clock and half past Quarter past and quarter to Telling time to 5 minutes Hours and days Find durations of time Compare durations of time 	 Interpret pictograms (2, 5 and 10) Block diagrams Position & direction Describe position Problem solving with position Describe movement Describing turns Describing movement and turns Making patterns with shapes

Year 3	Number and place Value	crossing ten - subtract ones and subtract tens Recap Find and make number bonds Bonds to 100 (tens and ones) Properties of shape Recognise 2-D and 3-D shapes Activity Make 2-D and 3-D shapes Count sides on 2-D shapes Count vertices on 2-D shapes Draw 2-D shapes Lines of symmetry Lines of symmetry Lines of symmetry - draw the whole Sort 2-D shapes Make patterns with 2-D shapes Count faces on 3-D shapes Count vertices on 3-D shapes Count vertices on 3-D shapes Sort 3-D shapes Make patterns with 3-D shapes	 Recap Make equal groups sharing Make equal groups - sharing Recap Make equal groups 	Outcomes Number – fractions	Number – fractions	Geometry – properties of shape
	 Identify, represent and estimate numbers using different representations. Find 10 or 100 more or less than a given number. 	 Multiplication and division Count from 0 in multiples of 4, 8, 50 and 100 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. 	 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. 	 Objectives: Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one- 	 Recognise and show, using diagrams, equivalent fractions with small denominators. Compare and order unit fractions, and fractions with 	 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,
	 Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Compare and order numbers up to 1000 	 Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two- digit 	 Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two- 	digit numbers or quantities by 10 Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	 the same denominators. Add and subtract fractions with the same denominator within one whole [for example, 57 + 17 = 67] Solve problems that involve 	three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.
	 Read and write numbers up to 1000 in numerals and in words. Solve number problems and practical problems involving these ideas. 	 numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, 	 digit numbers times one- digit numbers, using mental and progressing to formal written methods. Solve problems, including 	 Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Solve problems that involve all of 	all of the above. <u>Measurement – money</u> • Add and subtract amounts of money to give change, using both £ and p in	 Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Draw 2-D shapes and make 3-D shapes using modelling
	 Count from 0 in multiples of 4, 8, 50 and 100 Addition and Subtraction 	 involving multiplication and division, including positive integer scaling problems and correspondence problems in 	missing number problems, involving multiplication and division, including	the above. <u>Measurement – mass and capacity</u> • Measure, compare, add and	practical contexts. <u>Measurement – time</u> • Tell and write the time from	 materials. Recognise 3-D shapes in different orientations
	 Add and subtract numbers mentally, including: a three- digit number and ones; a three-digit number and tanks a three digit 	which n objects are connected to m objectives.	positive integer scaling problems and correspondence problems in which n objects are	subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	an analogue clock, including using Roman numerals from I to XII and 12-hour and 24- hour clocks.	 Statistics Interpret and present data using bar charts, pictograms and tables.
	 tens; a three digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of columnar 		connected to m objectives. <u>Measurement – length and</u> <u>perimeter</u>		 Estimate and read time with increasing accuracy to the nearest minute. Record and compare time in terms of seconds, minutes and hours. 	 Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in

	 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. 	 Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Measure the perimeter of simple 2D shapes. 	 Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. Know the number of seconds in a minute and the number of days in each month, year and leap year. Compare durations of events [for example to calculate the time taken by particular events or tasks]. Scaled bar charts and pictograms and tables
Year 4	 Number: Place Value count in multiples of 6, 7, 9, 25 and 1,000 find 1,000 more or less than a given number count backwards through 0 to include negative numbers recognise the place value of each digit in a four-digit number (1,000s, 100s, 100s, 100s, 100s, 110s, and 15) order and compare numbers beyond 1,000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1,000 solve number and practical problems that involve all of the above and with increasingly large positive numbers read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value Number: Addition and Subtraction 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 Measure: Area find the area of rectilinear shapes by counting squares Number: Multiplication and 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 	 Number: Multiplication and 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 3 numbers recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects Measurement: Length and Perimeter 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 Number: Fractions and Decimals 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 100 and dividing tenths by 10 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 add and subtract fractions with the same denominator recognise and write decimal equivalents of any number of tenths or hundreds recognise and write decimal equivalents of any number of tenths or hundreds recognise and write decimal equivalents of any number of tenths or hundreds 	 Decimals round decimals with 1 decimal place to the nearest whole number compare numbers with the same number of decimal places up to 2 decimal places solve simple measure and money problems involving fractions and decimals to 2 decimal places Measurement: Money and Time : estimate, compare and calculate different measures, including money in pounds and pence read, write and convert time between analogue and digital 12- and 24-hour clocks solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days Geometry: Properties of Shape 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 2 right angles by size 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 Statistics 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 solve comparison on a 2-D grid as coordinates in the first quadrant describe positions on a 2-D grid as coordinates in the first quadrant describe positions on a 2-D grid as coordinates in the first quadrant describe positions on a 2-D grid as coordinates in the first quadrant describe positions on a 2-D grid as coordinates i
Year 5	 Place value read, write, order and compare numbers to at least 1 000 000 Determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including 	Multiplication and division (Part B) (refer to multiplication and division) Fractions (Part B) • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	 Properties of shape 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

through zero round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000

• Solve number problems and practical problems that involve all of the above read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Addition and subtraction

- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- subtract numbers mentally with increasingly large numbers 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.

Multiplication and division (Part A)

- 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 (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19
- 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
- multiply and divide numbers mentally drawing upon known facts • 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
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 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.

Fractions (Part A)

- Compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 5 2 + 5 4 = 5 6 = 1 5 1]

read and write decimal numbers as fractions [for example, 0.71 • = 100 71]

Decimals and percentages

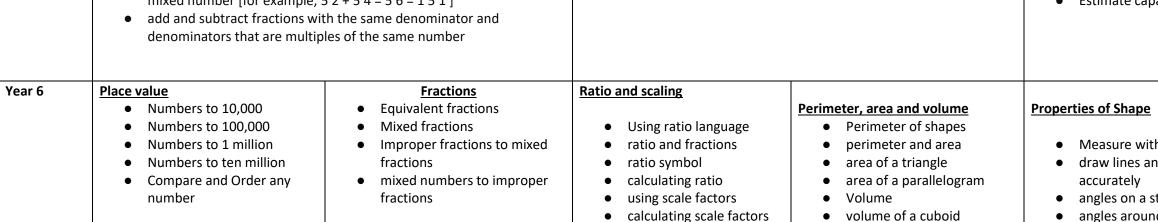
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- round decimals with two decimal places to the nearest whole number and to one decimal place
- read, write, order and compare numbers with up to three • decimal places
- solve problems involving number up to three decimal places 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 solve problems which require knowing percentage and decimal equivalents of 21, 41, 51, 52, 54 and those fractions with a denominator of a multiple of 10 or 25.

Perimeter and area

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- 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 and compare the area of rectangles (including squares), • and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes
- estimate volume [for example, using 1 cm3 blocks to build • cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time •
- use all four operations to solve problems involving measure [for • example, length, mass, volume, money] using decimal notation, including scaling.

Statistics

• Solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables.



- multiples of 900

Position and direction

Decimals

- Complements to 1 • •
- •

- •
- Decimal sequences
- - •

Measurement- Converting units

- Kilograms and kilometres
- Millimetres and millilitres
- Convert units of length
- Convert units of time •

Negative Numbers

- Count through zero in 1s
- Count through zero in multiples
- Find the difference •

Measurement- Volume

- Cubic centimetres
- Compare volume
- Estimate volume
- Estimate capacity

• draw given angles, and measure them in degrees (o) • identify: angles at a point and one whole turn (total 3600) angles at a point on a straight line and 21 a turn (total 1800) other • 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. • 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. • Use known facts to add and subtract decimals within Add and subtract decimals across 1 Add decimals with the same number of decimal places Subtract decimals with the same number of decimal places Add decimals with different numbers of decimal places Subtract decimals with different numbers of decimal places Efficient strategies for adding and subtracting decimals Multiply by 10, 100 and 1,000 Divide by 10, 100 and 1,000 Multiply and divide decimals – missing values Convert between metric and imperial units Calculate with timetables • Understand negative numbers

- Compare and order negative numbers

	Themed Projects, Consolidation & problem solving
h a protractor nd angles	
traight line d a point	

 Round number to 10, 100 and 1000 Round any number Negative numbers Four operations Add whole numbers with more than 4 digits. Subtract whole numbers with more than 4 digits Inverse operations Multi Step addition and subtraction problems Addition and subtraction Integers Multiply 4 digits by 1 digit Multiply 2 digits by 2 digits Multiply 4 digits by 2 digits Divide 4 digits by 1 digit Divide with remainders Short division Division using factors Long division order of operations Mental calculations & estimations. 	 compare and order fractions (including on a numberline) add and subtract fractions add and subtract mixed numbers multiply fractions by integers four rules with fractions fractions of an amount Measurement- Converting Units Metric measures Convert metric measures Calculate with metric measures Miles and kilometres Imperial measures 	 ratio and proportion problems. Algebra Find a rule of Algebra- one step. Find a rule of Algebra- two step. forming expressions substitution formulae forming equations solve simple one and two step problems find pairs of values Enumerate possibilities Fractions, decimals and percentages Decimals up to 2 decimal places to understand thousandths multiply by 10, 100 & 1000 divide by 10, 100 & 1000 multiply decimals by integers divide decimals by integers use division to solve problems decimals as fractions fractions to decimals Understand percentages 	Statistics • Read and interpret line graphs • draw line graphs • use line graphs to solve problems • circles • read and interpret pie charts • pie charts with percentages • draw pie charts • calculate the Mean	 calculate angle vertically oppo angles in a trian angles in specia quadrilaterals angles in regula draw shape acc draw 3D nets o Geometry- position an The first quadrates four quadrants translations reflections
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gles posite angles riangle ecial als gular polygons accurately ts of shapes	
and direction adrant nts	