Overview of progression of procedural knowledge 2023-24 Maths

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Topic	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value	Count verbally beyond 5. Count verbally beyond 10. Count verbally beyond 20. Accurately count items to 5 with one-to-one correspondence. Accurately count items to 10 with one-to-one correspondence. Correctly count sounds and actions, as well as objects. Show a secure understanding of the 'cardinal principle' (knows the last number reached when counting tells you the total). Subitise up to 3. Subitise up to 5. Show 'finger numbers' up to 5. Link numeral to amounts up to 5. Link numeral to amounts up to 10. Can use 'more than' and 'fewer than' to compare quantities. Can compare quantities up to 10 and say whether one is greater than, less than or the same as the other. Understand 'one more than/one less than'.	(to 10) Sort objects. Count objects. Represent objects. Count, read and write forwards from any number 0 to 10. Count, read and writing backwards from any number 0 to 10. Count one more. Count one less. One to one correspondence to start to compare groups. Compare groups using language such as equal, more/greater, less/fewer. Introduce = , > and < symbols. Compare numbers. Order groups of objects. Order numbers. Ordinal numbers (1st, 2nd, 3rd ....). The number line. (to 20) Count forwards and backwards and write numbers to 20 in numerals and words. Numbers from 11 to 20. Tens and ones. Count one more and one less. Compare groups of objects. Compare numbers. Order groups of objects. Order numbers. (100) Counting to 100. Partitioning numbers. Comparing numbers (1). Comparing numbers (2). Ordering numbers. One more, one less (to 50) Numbers to 50.	Count objects to 100 and read and write numbers in numerals and words. Represent numbers to 100. Tens and ones with a part whole model. Tens and ones using addition. Use a place value chart. Compare objects. Compare numbers. Order objects and numbers. Count in 2s, 5s and 10s. Count in 3s.	Hundreds. Represent numbers to 1,000. 100s, 10s and 1s (1). 100s, 10s and 1s (2). Number line to 1,000. Find 1, 10, 100 more or less than a given number. Compare objects to 1,000. Compare numbers to 1,000. Order numbers. Count in 50s.	Roman numerals to 100. Round to the nearest 10. Round to the nearest 100. Count in 1,000s. 1,000s, 100s, 10s and 1s. Partitioning. Number line to 10,000. 1,000 more or less. Compare numbers. Order numbers. Round to the nearest 1,000. Count in 25s. Negative numbers.	Number to 10,000. Roman numerals to 1,000. Round to the nearest 10, 100 and 1000. Number to 100,000. Compare and order numbers to 100,000. Round numbers within 100,000. Numbers to a million. Counting in 10s, 100s, 1,000s, 10,000s and 100,000s. Compare and order numbers to a million. Round numbers to a million. Negative numbers.	Numbers to ten million. Compare an order any number. Round any numbers. Negative numbers.

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		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.					
Addition and Subtraction	Solve real-life maths problems with numbers up to 5. Know the total of a larger set by subitising the groups within it and immediately combining them to find the total (conceptual subitising). Demonstrate an understanding of the composition of numbers to 5. Demonstrate an understanding of the composition of numbers to 10. Automatically recall number bonds to 5. Automatically recall some number bonds to 10. Apply knowledge of number bonds to recall some subtraction facts to 5.	Part whole model. Addition symbol.. Fact families Addition facts. Find number bonds for numbers within 10. Systematic methods for number bonds within 10. Number bonds to 10. Compare number bonds. Addition: Adding together. Addition: Adding more. Finding a part. Subtraction: Taking away, how many left? Crossing out. Subtraction: Taking away, how many left? Introducing the subtraction symbol. Subtraction: Finding a part, breaking apart. Fact families The 8 facts. Subtraction: Counting back. Subtraction: Finding the difference. Comparing addition and subtraction statements a + b > c. Comparing addition and subtraction statements a + b > c + d. Add by counting on. Find and make number bonds. Add by making 10. Subtraction –Not crossing 10. Subtraction –Crossing 10 (1). Subtraction –Crossing 10 (2).	Fact families Addition and subtraction bonds to 20. Check calculations. Compare number sentences. Related facts. Bonds to 100 (tens). Add and subtract 1s. 10 more and 10 less. Add and subtract 10s. Add a 2 digit and 1 digit number crossing ten. Subtract a 1 digit number from a 2 digit number crossing 10. 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 not crossing ten. Subtract a 2 digit number from a 2 digit number crossing ten subtract ones and tens. Bonds to 100 (tens and ones). Add three 1 digit numbers.	Add and subtract multiples of 100. Add and subtract 3 digit numbers and ones not crossing 10. Add 3 digit and 1 digit numbers crossing 10. Subtract a 1 digit number from a 3 digit number crossing 10. Add and subtract 3 digit numbers and tens not crossing 100. Add a 3 digit number and tens crossing 100. Add and subtract 100s. Spot the pattern making it explicit. Add and subtract a 2 digit and 3 digit number not crossing 10 or 100. Add a 2 digit and 3 digit number crossing 10 or 100. Subtract 2 digit number from a 3 digit number cross the 10 or 100. Add two 3 digit numbers not crossing 10 or 100. Add two 3 digit numbers crossing 10 or 100 Subtract a 3 digit number from a 3 digit number no exchange. Subtract a 3 digit number from a 3 digit number exchange. Exchange answers to calculations. Check.	Add and subtract 1s, 10s, 100s and 1000s. Add two 4 digit numbers no exchange. Add two 4 digit numbers one exchange. Add two 4 digit numbers more than one exchange. Subtract two 4 digit numbers no exchange. Subtract two 4 digit numbers one exchange. Subtract two 4 digit numbers more than one exchange. Efficient subtraction. Estimate answers. Checking strategies.	Add whole numbers with more than 4 digits (column method). Subtract whole numbers with more than 4 digits (column method). Round to estimate and approximate. Inverse operations (addition and subtraction). Multi step addition and subtraction problems.	Add and subtract whole numbers. Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why. Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.

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		Related Facts. Compare Number Sentences.					
Multiplication and division		Count in 10s. Make equal groups. Add equal groups. Make arrays. Make doubles. Make equal groups – grouping. Make equal groups – sharing.	Recognise equal groups. Make equal groups. Add equal groups. Multiplication sentences using the x symbol. Multiplication sentences from pictures. Use arrays. 2 times-table. 5 times-table. 10 times-table. Make equal groups sharing. Make equal groups grouping. Divide by 2. Odd and even numbers. Divide by 5. Divide by 10.	Multiplication equal groups. Multiplying by 3. Dividing by 3. The 3 times table. Multiplying by 4. Dividing by 4. The 4 times table. Multiplying by 8. Dividing by 8. The 8 times table. Comparing statements. Related calculations. Multiply 2 digits by 1 digit (1). Multiply 2 digits by 1 digit (2). Divide 2 digits by 1 digit (1). Divide 2 digits by 1 digit (2). Divide 2 digits by 1 digit (3). Scaling. How many ways?	Multiply by 10. Multiply by 100. Divide by 10. Divide by 100. Multiply by 1 and 0. Divide by 1. Multiply and divide by 6. 6 times table and division facts. Multiply and divide by 9. 9 times table and division facts. Multiply and divide by 7. 7 times table and division facts. 11 and 12 times table. Multiply 3 numbers. Factor pairs. Efficient multiplication. Written methods. Multiply 2 digits by 1 digit. Multiply 3 digits by 1 digit. Divide 2 digits by 1 digit (1). Divide 2 digits by 1 digit (2). Correspondence problems.	Multiples. Factors. Common factors. Prime numbers. Square numbers. Cube numbers. Multiplying by 10, 100 and 1000. Dividing by 10, 100 and 1000. Multiples of 10, 100 and 1000. Multiply 4 digits by 1 digit. Multiply 2 digits (area model). Multiply 2 digits by 2 digits. Multiply 3 digits by 2 digits. Multiply 4 digits by 2 digits. Divide 4 digits by 1 digit. Divide with remainders.	Multiply up to 4 digit by 1 digit number. Short division. Division using factors. Long division (1). Long division (2). Long division (3). Long division (4). Common factors. Common multiples. Primes. Squares and cubes. Order of operations. Mental calculations and estimation. Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy. Reasoning from known facts.
Fractions		Halving shapes or objects. Halving a quantity. Find a quarter of a shape or object. Find a quarter of a quantity.	Make equal parts. Recognise half. Find half. Recognise quarter. Find a quarter. Recognise a third. Find a third. Unit fractions. NonOunit fractions. Equivalence of $\frac{1}{2}$ and $^2/_4$. Find three quarters. Count in fractions.	Unit and non unit fractions. Making the whole. Tenths. Count in tenths. Tenths as decimals. Fractions of a number line. Fractions of a set of objects (1). Fractions of a set of objects (2). Fractions of a set of objects (3). Equivalent fractions (1), Equivalent fractions (2). Equivalent fractions (3). Compare fractions. Order fractions. Add fractions. Subtract fractions.	What is a fraction? Equivalent fractions (1) Equivalent fractions (2). Fractions greater than 1. Count in fractions. Add 2 or more fractions. Subtract 2 fractions. Subtract from whole amounts. Calculate fractions of a quantity. Problem solving calculate quantities.	Equivalent fractions. Improper fractions to mixed numbers. Mixed numbers to improper fractions. Number sequences. Compare and order fractions less than 1. Compare and order fractions greater than 1. Add and subtract fractions. Add fractions within 1. Add 3 or more fractions. Add fractions. Add mixed numbers. Subtract fractions. Subtract mixed numbers. Subtract breaking the whole. Subtract 2 mixed numbers.	Simplify fractions. Fractions on a number line. Compare & order (denominator). Compare & order (numerator). Add & subtract fractions (1). Add & subtract fractions (2). Adding fractions. Subtracting fractions. Mixed addition and subtraction. Multiply fractions by integers. Multiply fractions by fractions. Divide fractions by integers (1). Divide fractions by integers (2). Four rules with fractions. Fraction of an amount. Finding the whole.

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						Multiply unit fractions by an integer. Multiply non unit fractions by an integer. Multiply mixed numbers by integers. Fraction of an amount. Using fractions as operators.	
Number- decimals					Recognise tenths and hundredths. Tenths as decimals. Tenths on a place value grid. Tenths on a number line. Divide 1 digit by 10. Divide 2 digits by 10. Hundredths. Hundredths as decimals. Hundredths on a place value grid. Divide 1 or 2 digits by 100. Make a whole. Write decimals. Compare decimals. Order decimals. Round decimals. Halves and quarters.	Adding decimals within 1. Subtracting decimals within 1. Complements to 1. Adding decimals crossing the whole. Adding decimals with the same number of decimal places. Subtracting decimals with the same number of decimal places. Adding decimals with a different number of decimal places. Subtracting decimals with a different number of decimal places. Adding and subtracting whole and decimals. Decimal sequences. Multiplying decimals by 10, 100 and 1000. Dividing decimals by 10, 100 and 1,000.	Three decimal places. Multiply by 10, 100 and 1,000. Divide by 10, 100 and 1,000. Multiply decimals by integers. Divide decimals by integers. Division to solve problems. Decimals as fractions. Fractions to decimals (1). Fractions to decimals (2).
Number – decimals and percentages						Decimals up to 2 d.p. Decimals as fractions (1). Decimals as fractions (2). Understand thousandths. Thousands as decimals. Rounding decimals. Order and compare decimals. Understand percentages. Percentages as fractions and decimals. Equivalent F.D.P.	Fractions to percentages. Equivalent FDP. Percentage of an amount (1). Percentage of an amount (2). Percentages missing values. Percentage increase and decrease. Order FDP.
Geometry- shape	Can talk about some common 2D shapes using informal and mathematical language. Can talk about some common 3D shapes using informal and mathematical language.	Recognise and name 3D shapes. Sort 3D shapes. Recognise and name 2D shapes. Sort 2D shapes. Patterns with 3D and 2D shapes.	Recognise 2D and 3D shapes. Count sides on 2D shapes. Count vertices on 2D shapes. Draw 2D shapes. Lines of symmetry. Sort 2D shapes. Make patterns with 2D shapes. Count faces on 3D shapes. Count edges on 3D shapes. Count vertices on 3D shapes. Sort 3D shapes. Make patterns with 3D shapes.	Turns and angles. Right angles in shapes. Compare angles. Draw accurately. Horizontal and vertical. Parallel and perpendicular. Recognise and describe 2D shapes. Recognise and describe 3D shapes. Make 3D shapes.	Identify angles. Compare and order angles. Triangles. Quadrilaterals. Lines of symmetry. Complete a symmetric figure.	Measuring angles in degrees. Measuring with a protractor (1). Measuring with a protractor (2). Drawing lines and angles accurately. Calculating angles on a straight line. Calculating angles around a point. Calculating lengths and angles in shapes. Regular and irregular polygons.	Measure with a protractor. Introduce angles. Calculate angles. Vertically opposite angles. Angles in a triangle. Angles in a triangle special cases. Angles in a triangle missing angles. Angles in special quadrilaterals. Angles in regular polygons.

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	Can select shapes appropriately for tasks. Combine shapes to make new ones. Understand that shapes can be decomposed into smaller ones within them.					Reasoning about 3D shapes.	Draw shapes accurately. Nets of 3D shapes.
Geometry – position and direction	Explore shapes and spatial awareness by rotating and manipulating shapes. Understand positional language. Use positional language. Describe and discuss a route.	Describe turns. Describe Position (1). Describe Position (2).	Describing movement. Describing turns. Describing movement and turns. Making patterns with shapes.		Describe position. Draw on a grid. Move on a grid. Describe a movement on a grid.	Position in the first quadrant. Reflection. Reflection With coordinates. Translation. Translation with coordinates.	Coordinates in the first quadrant. Coordinate in four quadrants. Translations. Reflections.
Measurement –length and height	Make direct comparisons between objects relating to size. Begin to use units to compare size. Make direct comparisons between objects relating to length. Begin to use units to compare length. Make direct comparisons between objects relating to weight. Begin to use units to compare weight. Make direct comparisons between objects	Compare lengths and heights. Measure length (1). Measure length (2).	Measure length (cm). Measure length (m). Compare lengths. Order lengths. Four operations with lengths.	Measure length. Equivalent lengths m & cm. Equivalent lengths mm & Compare lengths. Add lengths. Subtraction lengths. Measure perimeter. calculate perimeter.			

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	relating to capacity. Begin to use units to compare capacity. Can describe a sequence of events.						
Measurement- length and perimeter					Kilometres. Perimeter on a grid. Perimeter of a rectangle. Perimeter of rectilinear shapes.	Measure perimeter. Calculate perimeter. Area of rectangles. Area of compound shapes. Area of irregular shapes.	
Measurement - area					What is area? Counting squares Making shapes. Comparing area.		
Measurement- perimeter, area, volume							Shapes same area. Area and perimeter. Area of a triangle (1). Area of a triangle (2). Area of a triangle (3). Area of a parallelogram. Volume counting cubes. Volume of a cuboid.
Measurement – weight and volume		Introduce weight and mass. Measure mass. Compare mass. Introduce capacity. Measure capacity. Compare capacity.				What is volume? Compare volume. Estimate volume. Estimate capacity.	
Measurement – mass, capacity, temperature			Compare mass. Measure mass in grams. Measure mass in kilograms. Compare capacity. Millilitres. Litres. Temperature.	Measure mass (1). Measure mass (2). Compare mass. Add and subtract mass. Measure capacity (1). Measure capacity (2). Compare capacity. Add and subtract capacity.			
Measurement- converting units						Kilograms and kilometres. Milligrams and millilitres. Metric units. Imperial units. Converting units of time. Timetables.	Metric measures. Convert metric measures. Calculate with metric measures. Miles and kilometres. Imperial measures.
Measurement- money		Recognising coins. Recognising notes. Counting in coins.	Count money –pence. Count money –pounds (notes and coins). Count money –notes and coins.	Pounds and pence. Converting pounds and pence. Adding money. Subtracting money.	Pounds and pence. Ordering amounts of money. Using rounding to estimate money.		

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			Select money. Make the same amount. Compare money. Find the total. Find the difference. Find change. Two-step problems.	Giving change.	Four operations.		
Measurement - time		Before and after. Dates. Time to the hour. Time to the half hour. Writing time. Comparing time.	O'clock and half past. Quarter past and quarter to. Telling time to 5 minutes. Minutes in an hour, hours in a day. Find durations of time. Compare durations of time.	Months and years. Hours in a day. Telling the time to 5 minutes. Telling the time to the minute. AM and PM. 24 hour clock. Finding the duration. Comparing the duration. Start and end times. Measuring time in seconds.	Hours, minutes and seconds. Years, months, weeks and days. Analogue to digital 12 hour. Analogue to digital 24 hour.		
Statistics			Make tally charts. Draw pictograms (1 1). Interpret pictograms (1 1). Draw pictograms (2, 5 and 10). Interpret pictograms (2, 5 and 10). Block diagrams.	Pictograms. Bar charts. Tables. 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.	Interpret charts. Comparison, sum and difference. Introducing line graphs. Line graphs. 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.	Read and interpret line graphs. Draw line graphs. Use line graphs to solve problems. Read and interpret tables. Two way tables. Timetables. Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables.	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. The mean.
Algebra							Find a rule one step. Find a rule two step. Use an algebraic rule. Substitution. Formulae. Word problems. Solve simple one step equations. Solve two step equations. Find pairs of values. Enumerate possibilities.
Ratio							Use ratio language. Ratio and fractions. Introducing the ratio symbol. Calculating ratio. Using scale factors. Calculating scale factors. Ratio and proportion problems.

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