

Autumn 1					
Unit 1: Place value within 100,000 (8 textbook lessons)		Unit 2: Place value within 1,000,000 (8 textbook lessons)		Unit 3: Addition and subtraction (10 textbook lessons)	
Skills focus: -Read, write, order and compare numbers up to at least 100,000 -Understand the value of each digit -Count forwards and backwards in powers of 10 -Round numbers to the nearest 10, 100, 1,000, 10,000 and 100,000 -Use number lines to 100,000 -Read Roman numerals to 1,000 and recognise years written in Roman numerals Key vocabulary: place value, digit, numeral, ten-thousands, thousands, hundreds, tens, ones, partition, compare, order, greater than, less than, round, nearest, estimate, number line, Roman numerals Sentence stems: The value of the digit ___ is ___ because... I know ___ is greater than ___ because... I rounded ___ to ___ because... The number is between ___ and ___ on the number line. The Roman numeral ___ represents...		Skills focus: -Read, write, order and compare numbers up to 1,000,000 -Identify the value of each digit -Represent numbers using different representations -Use number lines to 1,000,000 -Round numbers to different degrees of accuracy -Interpret negative numbers in context -Count forwards and backwards through zero -Count in powers of 10 and identify number sequences Key vocabulary: million, hundred-thousand, ten-thousand, thousand, place value, digit, compare, order, round, estimate, number line, negative, positive, zero, sequence, interval Sentence stems: The digit ___ has a value of... ___ is greater than ___ because... I rounded ___ to ___ because... The sequence changes by... I know ___ is negative because...		Skills focus: -Add and subtract whole numbers with more than four digits using formal written methods -Use rounding to estimate and check answers -Develop mental addition and subtraction strategies with increasingly large numbers -Use inverse operations -Solve multi-step problems and choose appropriate operations and methods Key vocabulary: addition, subtraction, add, subtract, sum, total, difference, estimate, inverse, operation, exchange, regroup, columnar, formal method, mental method, accuracy Sentence stems: I exchanged ___ because... I chose this method because... My estimate is ___, so I know... I checked my answer using... The inverse operation is...	
Possible resources: Place value counters Dienes/Base 10 Place value charts 100/1,000/10,000 grids Number lines Rounding number lines Roman numeral cards		Possible misconceptions: -Difficulty understanding the ten-thousands column. -Misaligning digits -Rounding incorrectly -Misreading Roman numeral symbols -Assuming the value of a digit stays the same regardless of its position		Possible resources: Place value counters Dienes Place value charts Number lines Part-whole models Bar models Column method grids Squared paper Estimation number lines	
Strengthening: -Revisit four-digit place value -Build numbers practically -Use a labelled place value chart and rounding number line consistently -Partition numbers concretely -Use matching and sequencing for Roman numerals		Deepening: -Find numbers that satisfy several place-value conditions -Estimate positions on unmarked number lines -Investigate patterns when increasing/decreasing by powers of 10 -Explore Roman numeral patterns		Strengthening: -Revisit four-digit addition and subtraction -Use concrete place-value equipment -Use squared paper to align columns -Begin with calculations involving fewer exchanges -Break multi-step problems into individual steps	
Ready to Progress Link:		Ready to Progress Link:		Ready to Progress Link:	

Autumn 2					
Unit 4: Graphs and tables (5 textbook lessons)		Unit 5: Multiplication and division (1) (10 textbook lessons)		Unit 6: Measure – area and perimeter (7 textbook lessons)	
Skills focus: -Read, complete and interpret tables, including timetables -Understand and interpret two-way tables -Read and interpret line graphs -Solve comparison, sum and difference problems using data -Construct line graphs accurately Key vocabulary: data, table, timetable, two-way table, line graph, scale, axis, axes, category, information, compare, total, difference, interval, represent Sentence stems: The table shows... I know the answer is ____ because... The scale increases by... The difference between ____ and ____ is... I chose this scale because...		Skills focus: -Identify multiples and factors -Find factor pairs and common factors -Recognise prime and composite numbers -Use square and cube numbers -Apply factors and multiples to problem solving -Use inverse operations. Multiply and divide by 10, 100 and 1,000 -Multiply and divide by multiples of 10, 100 and 1,000 -Solve scaling and rate problems Key vocabulary: multiple, factor, factor pair, common factor, prime, prime number, composite, square number, cube number, squared, cubed, inverse, multiply, divide, scaling, rate Sentence stems: ____ is a factor of ____ because... The factor pairs are... ____ is prime/square/cube number because... The inverse operation is...		Skills focus: -Measure and calculate the perimeter of composite rectilinear shapes -Calculate the area of rectangles and squares using standard square units -Compare areas -Estimate the area of irregular shapes -Understand the relationship between area and perimeter Key vocabulary: perimeter, area, length, width, rectangle, square, composite, rectilinear, measure, centimetre, metre, square centimetre, square metre, cm ² , m ² , estimate, compare Sentence stems: Perimeter measures... / Area measures... I calculated the perimeter by... The area is ____ cm ² because... / I estimated the area by... These shapes have the same area but different perimeters because...	
Possible resources: Graph paper Squared paper Rulers Tables Timetables Line-graph templates Data sets Classroom surveys		Possible resources: Multiplication grids Counters/Cubes Arrays Factor trees/cards Number cards 100 squares Place value charts Place value counters		Possible resources: Rulers Tape measures Metre sticks Squared paper Geoboards Multilink cubes String 2D shapes	
Possible misconceptions: -Misreading scales or intervals -Confusing rows and columns -Difficulty interpreting two-way tables -Plotting points inaccurately -Joining points incorrectly -Answering questions without referring to the data		Possible misconceptions: -Confusing factors and multiples -Thinking 1 is a prime number -Confusing square and cube numbers -Thinking multiplying/dividing by 10 simply means adding/ removing a zero in every context -Confusing inverse operations		Possible misconceptions: -Confusing area and perimeter -Measuring only some sides of composite shapes -Forgetting square units for area -Assuming a larger perimeter means a larger area	
Strengthening: -Begin with simple tables and familiar data -Highlight row and column headings -Use fewer categories -Use pre-labelled axes and scales -Model how to plot one point at a time.		Deepening: -Solve multi-step data problems -Identify errors -Explain why a particular scale is appropriate -Create questions based on a data set -Compare information represented in different ways		Strengthening: -Revisit multiplication facts and arrays -Build factor pairs in counters -Use a 100 square to identify multiples and primes -Build square/cube numbers physically -Use place-value charts to demonstrate	
Strengthening: -Find numbers with specific factor properties -Explain why a number is prime or composite -Investigate relationships between squares, cubes, factors and multiples -Solve rate and scaling problems and explain the chosen method		Deepening: -Trace perimeter physically with string -Count squares -Highlight every side of composite shapes -Use simple rectangles before irregular shapes -Compare area and perimeter of same shape		Strengthening: -Find shapes with the same area but different perimeters -Find missing lengths from perimeter -Investigate possible areas/perimeters under constraints -Improve estimates of irregular areas and justify	
Ready to Progress Link:		Ready to Progress Link: 5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). 5MD–1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size. 5MD–2 Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.		Ready to Progress Link: 5G–2 Compare areas and calculate the area of rectangles (including squares) using standard units.	

Spring 1					
Unit 7: Multiplication and division (2) (11 textbook lessons)		Unit 8: Fractions (1) (8 textbook lessons)		Unit 9: Fractions (2) (12 textbook lessons)	
Skills focus: -Develop formal written multiplication and division methods -Multiply numbers up to four digits by one- and two-digit numbers -Divide numbers up to four digits by a one-digit number using short division -Interpret remainders appropriately -Solve multiplication and division problems, including multi-step problems Key vocabulary: multiplication, multiply, division, divide, factor, multiple, product, quotient, remainder, inverse, short division, long multiplication, exchange, regroup, formal method Sentence stems: I partitioned ___ into ___ because... I exchanged ___ because... The remainder means... I chose division/multiplication because...		Skills focus: -Recognise and represent fractions -Convert between improper fractions and mixed numbers -Compare and order fractions whose denominators are multiples of the same number -Understand fractions as division -Develop fraction representations using diagrams and number lines Key vocabulary: fraction, numerator, denominator, whole, part, equivalent, improper fraction, mixed number, proper fraction, compare, order, greater than, less than, division Sentence stems: The numerator tells me... The denominator tells me... I converted the improper fraction by... ___ is greater than ___ because... The fraction represents the division calculation...		Skills focus: -Add and subtract fractions with the same denominator and denominators that are multiples of the same number -Add fractions where the total is greater than one -Convert between improper fractions and mixed numbers when necessary -Solve fraction problems Key vocabulary: fraction, numerator, denominator, equivalent, common denominator, add, subtract, total, difference, mixed number, improper fraction, simplify Sentence stems: I changed ___ into an equivalent fraction because... The denominator is ___ because... The total is greater than one because... I converted the answer to a mixed number because...	
Possible resources: Place value counters Dienes/Base 10 Arrays Multiplication grids Place value charts Bar models Number lines Short-division grids		Possible misconceptions: -Misaligning columns -Forgetting to exchange -Losing place value of a digit -Confusing grouping and sharing -Using the wrong operation -Misinterpreting remainders -Forgetting the 0 place holder		Possible resources: Fraction walls Fraction strips Fraction circles Bar models Number lines Counters Part-whole models	
Possible misconceptions: -Thinking improper fractions are "wrong" -Confusing numerator and denominator -Comparing fractions incorrectly -Difficulty converting fractions -Not recognising a fraction as a division calculation		Possible resources: Fraction walls Fraction strips Fraction circles Bar models Number lines Counters Paper folding		Possible misconceptions: - Adding denominators together -Changing the denominator incorrectly -Forgetting to convert equivalent fractions -Difficulty recognising when the answer is greater than 1	
Strengthening: -Revisit multiplication facts -Partition numbers first -Use concrete equipment to model multiplication -Use grouping equipment for division -Begin with no exchanges or remainders first		Deepening: -Compare methods -Explain why exchanges are required -Solve missing-digit calculations -Create problems with particular remainders -Solve multi-step problems and justify the operations		Strengthening: -Begin with fractions with the same denominator -Use fraction strips to physically combine fractions -Introduce equivalent fractions using visuals -Keep the denominator highlighted	
Deepening: -Solve missing-fraction problems -Find multiple solutions -Explain why equivalent fractions are needed -Create calculations with a specified answer -Solve multi-step fraction problems and explain		Strengthening: -Revisit equivalent fractions -Use concrete fraction strips and bar models -Build improper fractions physically before converting -Use number lines to compare fractions -Connect fractions directly to division		Deepening: -Find multiple representations of the same fraction -Explain equivalent fractions -Find fractions between two given values -Solve missing-number fraction problems -Explain the relationship between fractions and division	
Ready to Progress Link: SMD–3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. SMD–4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.		Ready to Progress Link: 5F–2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.		Ready to Progress Link:	

Spring 2			
Unit 10: Fractions (3) (7 textbook lessons)		Unit 11: Decimals and percentages (12 textbook lessons)	
Skills focus: -Multiply proper fractions and mixed numbers by whole numbers -Find fractions of quantities -Use multiplication to solve fraction problems -Use fractions as operators -Apply fraction multiplication to word problems and practical contexts Key vocabulary: fraction, numerator, denominator, proper fraction, mixed number, multiply, multiplication, whole number, quantity, operator, product Sentence stems: I multiplied the fraction by ____ because... ____ of ____ means... The fraction acts as an operator because... I represented this using... I know my answer is reasonable because...		Skills focus: -Read, write, order and compare decimals with up to three decimal places -Understand thousandths as fractions and decimals -Round decimals to the nearest whole number and one decimal place -Understand percentages as parts per hundred -Convert between simple fractions, decimals and percentages -Solve problems involving equivalent fractions, decimals and percentages Key vocabulary: decimal, decimal point, tenths, hundredths, thousandths, fraction, percentage, per cent, %, equivalent, convert, compare, order, round Sentence stems: The digit ____ represents... ____ thousandths is equivalent to... I rounded ____ because... ____% is equivalent to ____ because... I converted the fraction by... These representations are equivalent because...	
Possible resources: Fraction strips/walls Fraction circles Bar models Counters Number lines Arrays Place value style grids		Possible misconceptions: - Multiplying the denominator when it is not necessary -Treating fractions as whole numbers -Difficulty understanding a fraction as an operator -Confusing "fraction of" with addition -Difficulty multiplying mixed numbers by whole numbers	
Strengthening: - Use concrete fraction models to show repeated groups -Begin with unit fractions before non-unit -Use bar models to find fractions of quantities -Connect multiplication to repeated addition before formal methods		Strengthening: - Revisit tenths and hundredths -Build decimals using place value equipment -Use thousandths grids -Link percentages directly to hundredths using a 100-square -Use visual fraction-decimal-percentage equivalence before introducing abstract	
Deepening: - Find missing values -Compare different methods -Explain the meaning of a fraction as an operator -Solve multi-step fraction problems -Create a problem where a fraction multiplied by a whole number gives a particular answer		Deepening: -Find equivalent fraction, decimal and percentage representations -Explain why 25%, 0.25 and 1/4 are equivalent -Find missing values -Investigate decimal patterns -Solve problems involving conversions	
Ready to Progress Link:		Ready to Progress Link: SNPV–1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. SNPV–2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. SNPV–3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. 5F–3 Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.	

Summer 1					
Unit 12: Decimals (15 textbook lessons)		Unit 13: Geometry – properties of shapes (1) (7 textbook lessons)		Unit 14: Geometry – properties of shapes (2) (5 textbook lessons)	
Skills focus: -Add and subtract decimals with up to three decimal places -Multiply and divide decimals by 10, 100 and 1,000 -Understand decimal place value through thousandths -Round decimals -Solve problems involving decimals, including money and measures Key vocabulary: decimal, decimal point, tenths, hundredths, thousandths, place value, digit, add, subtract, multiply, divide, equivalent, round, estimate Sentence stems: The digit ___ has a value of.. I aligned the decimal points because.. When I multiply by 100... / When I divide by 1,000.. I rounded ___ to ___ because...		Skills focus: -Identify and compare angles -Understand angles as a measure of turn -Identify acute, obtuse, reflex and right angles -Estimate and measure angles -Use a protractor accurately -Identify angles within shapes Key vocabulary: angle, acute, obtuse, reflex, right angle, straight angle, degrees, measure, estimate, protractor, vertex, vertices, turn Sentence stems: This angle is ___ because.. I estimated ___° because.. I placed the protractor.. I know I have used the correct scale because.. The angle is greater/smaller than ___ because...		Skills focus: -Identify and use properties of 2D shapes -Understand regular and irregular polygons -Identify triangles and quadrilaterals from their properties -Recognise symmetry -Describe shapes using precise mathematical language Key vocabulary: polygon, regular, irregular, triangle, quadrilateral, pentagon, hexagon, octagon, side, vertex, angle, parallel, perpendicular, symmetry, line of symmetry Sentence stems: This is a ___ because.. It has ___ sides and ___ vertices. The shape is regular because.. It is symmetrical because.. I classified these shapes together because...	
Possible resources: Decimal place value charts Place value counters Dienes/Base 10 Decimal grids Number lines Money Measuring equipment Squared paper		Possible misconceptions: - Misaligning decimal points when adding/subtracting -Treating decimal digits as whole numbers -Confusing tenths, hundredths and thousandths -Moving digits incorrectly when multiplying/dividing by powers of 10 -Incorrect rounding		Possible resources: Shape cards Rulers Geoboards Mirrors 2D shapes Sorting hoops Squared paper	
Strengthening: -Build decimals concretely -Keep a place-value chart visible during calculations -Begin with decimals with one decimal place -Use money and measures to give calculations a meaningful context		Deepening: - Find missing digits -Explain why decimal points must be aligned -Identify and correct errors -Create decimal calculations with a particular answer -Solve multi-step problems with decimals and measures		Strengthening: -Revisit right, acute and obtuse angles -Use physical turns first -Model how to position a protractor step-by-step -Use highlighted zero lines and simple angles initially -Compare angles directly	
Strengthening: -Explain why an estimate is reasonable -Find missing angles -Identify and correct protractor errors -Create angles satisfying multiple conditions -Investigate relationships between angles in shapes		Deepening: -Explain why an estimate is reasonable -Find missing angles -Identify and correct protractor errors -Create angles satisfying multiple conditions -Investigate relationships between angles in shapes		Strengthening: -Handle and rotate shapes -Sort shapes using one property at a time -Revisit names of common polygons -Use physical resources to identify sides, vertices and angles -Use mirrors and folding to explore symmetry	
Ready to Progress Link:		Ready to Progress Link: 5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.		Ready to Progress Link:	

Summer 2					
Unit 15: Geometry – position and direction (4 textbook lessons)		Unit 16: Measure – converting units (10 textbook lessons)		Unit 17: Measure – volume and capacity (4 textbook lessons)	
Skills focus: -Describe positions on a grid -Use coordinates in the first quadrant -Translate shapes and describe translations -Reflect shapes in horizontal and vertical lines -Use mathematical language to describe movement and position Key vocabulary: position, coordinate, grid, axis, axes, horizontal, vertical, translation, translate, reflection, reflect, quadrant, clockwise, anticlockwise Sentence stems: The coordinate is... The shape moves ____ squares... The translation is... The shape has been reflected in... I know this is horizontal because...		Skills focus: -Convert between metric units of length, mass and capacity -Understand relationships between units -Use decimal notation when converting -Understand approximate equivalences between metric and imperial units -Convert units of time -Solve problems involving measures and timetables Key vocabulary: metric, imperial, convert, equivalent, kilometre, metre, centimetre, millimetre, kilogram, gram, litre, millilitre, inch, pound, pint, time, duration, timetable Sentence stems: I converted ____ into ____ by... The larger unit is... I multiplied/divided because... ____ is approximately equivalent to... I know this conversion is correct because...		Skills focus: -Understand volume and capacity -Estimate volume using cubic units -Compare volumes -Build cuboids using cubes -Estimate and compare capacity using practical equipment -Develop understanding of cubic centimetres and litres/millilitres Key vocabulary: volume, capacity, cubic centimetre, cm ³ , cube, cuboid, capacity, litre, millilitre, estimate, measure, compare, container Sentence stems: Volume measures... The volume is ____ cm ³ because... I estimated ____ because... This container has greater capacity because... I used cubic units because...	
Possible resources: Coordinate grids Squared paper Mirrors Counters Shape cards Floor grids Arrows Interactive whiteboard grids		Possible misconceptions: -Reversing the coordinates -Confusing the x- and y-axis -Moving a shape rather than describing its translation -Reflecting in the wrong line -Confusing horizontal and vertical movement		Possible resources: 1 cm ³ cubes Multilink cubes Cuboids Containers Measuring jugs Water/rice/sand Litre and millilitre containers	
Possible misconceptions: -Rulers -Metre sticks -Measuring tapes -Scales -Weighing equipment -Measuring jugs -Capacity containers -Conversion charts -Timetables		Possible misconceptions: -Using the wrong operation -Forgetting which unit is larger -Treating conversion as simply "adding zeros" -Confusing metric and imperial -Difficulty converting time because units do not work in base 10		Possible misconceptions: - Confusing volume and capacity -Thinking a taller container always has greater capacity. - Counting cubes incorrectly Confusing square units with cubic units	
Strengthening: - Begin with physical movement on a floor grid -Practice reading coordinates before plotting -Use labelled axes -Use one-step translations initially -Use mirrors for reflection -Explicitly teach horizontal and vertical		Deepening: -Give multi-step translation instructions -Find missing coordinates -Identify the transformation from an original and image -Explain how a reflection differs from a translation -Create instructions for another person to follow		Strengthening: - Build cuboids using 1 cm ³ cubes -Count cubes physically -Compare containers using water -Use practical examples before introducing abstract diagrams -Explicitly contrast area with volume	
Deepening: -Create a clear conversion ladder -Link conversions to place value for metric units -Use visual arrows to show whether the number should increase or decrease -Keep time conversions separate from metric conversions		Deepening: - Solve multi-step measure problems -Choose the most efficient unit -Explain why an operation is required -Solve problems combining different units -Compare metric and imperial measurements and discuss why equivalences are approximate		Deepening: -Find different cuboids with the same volume -Explain why two containers can have different shapes but similar capacities -Improve estimates -Find missing dimensions from a given volume -Justify estimates using mathematical reasoning	
Ready to Progress Link:		Ready to Progress Link: 5NPV–5 Convert between units of measure, including using common decimals and fractions.		Ready to Progress Link:	