

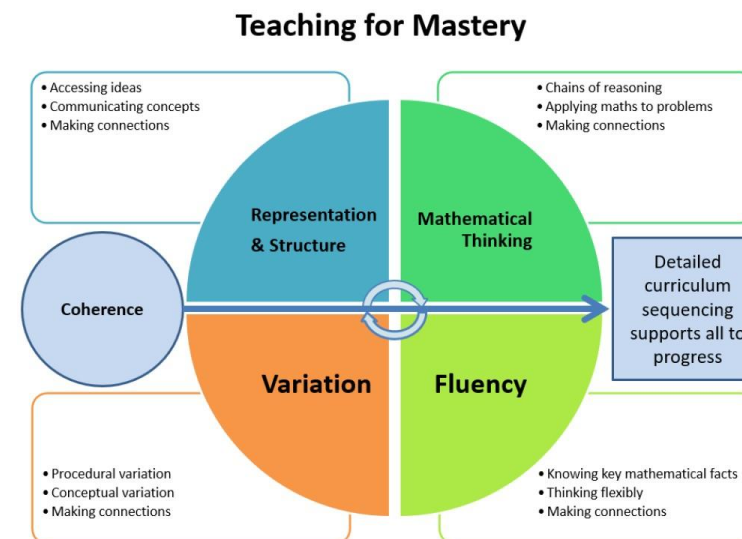


Devonshire Primary Academy
Year 6 Mathematics Long Term Plan 2026-2027



The Five Big Ideas of Teaching for Mastery

Coherence - small connected steps build deep understanding.
Representation and Structure - manipulatives and images expose the maths.
Mathematical Thinking - pupils explain, reason and justify.
Fluency - secure recall and flexible, efficient strategies.
Variation - careful examples draw attention to key concepts.



Shape Thread Through Year 6

Shape is revisited through composition and decomposition, circle properties, area, perimeter, volume, position and direction, ratio, statistics and scale. Geometry supports KS2 reasoning and problem solving.

Mapping: U4 draw/compose/decompose shapes and circle vocabulary; U6 area, perimeter, volume, unit conversion and position/direction; U7 fractions and percentages; U8 statistics including pie charts; U9 ratio and proportion.

Fluency Thread Through Year 6

Fluency is secured through knowledge of structures, large-number place value, multiplication and division, fractions, percentages, ratio, order of operations, algebraic thinking, formulae and statistical interpretation.

Mapping: U1 and U10 calculation structures; U2-U3 place value; U5 multiplication/division; U6 formulae and conversions; U7 fractions and percentages; U8 pie charts; U11-U13 unknowns, order of operations and mean.

Created using: Curriculum Review, Maths Progression Document, National Curriculum, Whole School NCETM Overview and Year 6 Curriculum Overview.

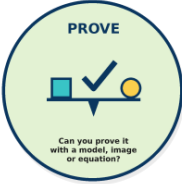
Year 6 disciplinary knowledge and reasoning

These six recurring statements describe how pupils work mathematically. Revisit them in every unit. The selected buttons identify explicit teaching opportunities; other reasoning processes remain available throughout each lesson.

Build on Year 5 by evaluating arguments and strategies, justifying generalisations and refining independent solutions.

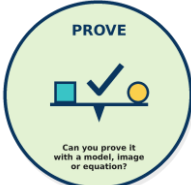
ing process	Year group statement
ent	I can move fluently between representations and justify their use.
patterns and connect	I can generalise relationships and prove or disprove simple claims.
and justify	I can justify conclusions using precise mathematical language and evaluate mathematical arguments.
efficient strategies	I can evaluate strategies and justify an efficient choice for the problem.
nd solve problems	I can plan and adapt a systematic approach to unfamiliar multi-step problems.
nd refine	I can check accuracy, efficiency and conclusions, then refine my approach.

Existing year group buttons

PROVE  Can you prove it with a model, image or equation? Justify a claim using a model, known facts or an argument.	GENERALISE  What is always, sometimes or never true? Describe a relationship and test when it is true.	CHALLENGE  What happens if...? Explore what changes when a condition changes.	EVALUATE  Which strategy works best? How do you know? Judge the accuracy and efficiency of a solution or strategy.
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Teach the processes through modelling, dialogue and supported practice. Pupils may explain through speech, actions, objects, drawings or communication aids. Encourage perseverance and a willingness to revise an approach.

When generalising, examples help test a claim; they do not by themselves prove it is always true. Use known properties or a general argument, and use a counterexample to disprove a claim.

Autumn Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Autumn 1 Unit 1 - Calculating using knowledge of structures (1)	Use known structures to solve additive calculations efficiently.	Part-whole structures, equivalence and compensation can simplify calculations and support mental fluency.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT use mathematical structures to calculate efficiently.	Small steps: use part-whole; compensation; equivalence; solve additive problems; explain strategy choice. NCETM Link Oak 1 , Oak 2 , Oak 3 Teaching Guide	Y5 written and mental calculation with whole numbers and decimals.	Confidence, reasoning and efficient problem solving.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Solution, decimal fractions, equivalence, compensation, budget, constant.						
Previous Knowledge Needed	Y5 place value, calculation and decimal fluency.						
Explicit reasoning buttons and unit prompts  PROVE Justify why a compensation or equivalence preserves the result.  EVALUATE Which strategy is efficient for these numbers, and how can you check it?							

Autumn Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Autumn 1 Unit 2 - Multiples of 1000	Read, write and calculate with multiples of 1,000.	Large numbers are structured using thousands and powers of 10. Multiples of 1,000 support scaling and calculation.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT understand and use multiples of 1,000.	Small steps: read multiples; compose/decompose; compare/order; calculate with multiples; solve contexts. NCETM Link Oak 4 Teaching Guide	Y5 numbers to 1,000,000 and powers of 10.	Precision and confidence with large numbers.

Recurring disciplinary statements

I can move fluently between representations and justify their use.

I can generalise relationships and prove or disprove simple claims.

I can justify conclusions using precise mathematical language and evaluate mathematical arguments.

I can evaluate strategies and justify an efficient choice for the problem.

I can plan and adapt a systematic approach to unfamiliar multi-step problems.

I can check accuracy, efficiency and conclusions, then refine my approach.

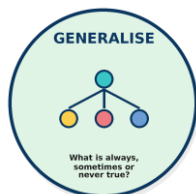
Vocab	Comma, gridlines, multiple, thousands, place value.
Previous Knowledge Needed	Y5 place value to 1,000,000 and multiplying/dividing by powers of 10.

Comma, gridlines, multiple, thousands, place value.

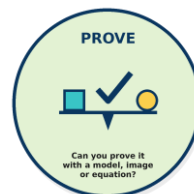
Previous Knowledge Needed

Y5 place value to 1,000,000 and multiplying/dividing by powers of 10.

Explicit reasoning buttons and unit prompts



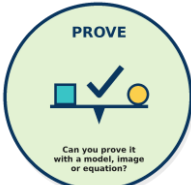
GENERALISE Explain how a known fact extends to multiples of 1,000.



PROVE Justify the scaling relationship using place value and equations.

Autumn Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Autumn 2 Unit 4 - Draw, compose and decompose shapes	Draw, compose and decompose shapes accurately using properties; identify circle parts.	Shapes can be composed/decomposed using known properties, nets and relationships. Circle parts include radius, diameter and circumference.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT draw, compose and decompose shapes.	Small steps: draw accurately; identify components; use nets; compose shapes; reason about congruence; identify radius, diameter and circumference. NCETM Link Oak 8 Teaching Guide	Y5 angles, area and properties of shapes.	Creativity, precision and visual reasoning.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Net, parallelogram, congruent, compose, decompose, face, circle, radius, diameter, circumference.						
Previous Knowledge Needed	Y5 angles, properties of shape and measuring accurately.						
Explicit reasoning buttons and unit prompts PROVE Use properties to justify a construction and explain why diameter is twice radius. CHALLENGE Will this arrangement fold into the intended solid? Explain and test the net.							

Spring Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Spring 1 Unit 5 - Multiplication and division	Use formal and mental methods for multiplication and division, including long division.	Multiplication and division use place value, factors, multiples and known facts to calculate accurately.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT multiply and divide accurately using efficient methods.	Small steps: long multiplication; short division; long division; interpret remainders; check and estimate. NCETM Link No Oak unit Teaching Guide 1 , Teaching Guide 2	Y5 short multiplication/division and factors/multiples.	Perseverance, accuracy and self-checking.

Spring Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Spring 1 Unit 6 - Area, perimeter, volume, units, position and direction	Solve problems involving area, perimeter, volume, coordinates, movement and unit conversion, including miles and kilometres.	Area, perimeter and volume connect to multiplication and measure. Cuboid volume uses $L \times W \times H$. Coordinates describe position and movement.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT solve measure, volume and position problems.	Small steps: calculate area/perimeter; calculate volume of cubes/cuboids; convert units incl. miles/km; use coordinates; describe translation/reflection; solve contexts. NCETM Link Oak 11 Teaching Guide	Y5 area/scaling, converting units, volume/capacity and coordinates.	Accuracy, spatial reasoning and real-life application.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Base, scale factor, coordinate, translation, perimeter, area, volume, cube, cuboid, formula, mile, kilometre, conversion.						
Previous Knowledge Needed	Y5 area, scaling, converting units and coordinates knowledge.						
Explicit reasoning buttons and unit prompts  PROVE Justify a formula, missing measure or transformation using known properties.  EVALUATE Check units, coordinates and whether the final solution fits the context.							

Spring Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Spring 2 Unit 7 - Fractions and percentages	Calculate with fractions and percentages, including equivalence and problem solving.	Fractions, decimals and percentages are connected representations of proportion.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT calculate with fractions and percentages.	Small steps: simplify fractions; add/subtract/multiply/divide fractions; convert FDP; solve percentage problems. NCETM Link Oak 12 , Oak 13 , Oak 14 Teaching Guide 1 , Teaching Guide 2 , Teaching Guide 3 , Teaching Guide 4	Y5 fractions, decimals and percentages.	Precision, perseverance and reasoning from evidence.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Related/non-related fractions, percentage, equivalence, simplify, proportion.						
Previous Knowledge Needed	Y5 fractions, decimals and percentage equivalents.						
Explicit reasoning buttons and unit prompts GENERALISE State and justify a relationship between equivalent fractions, decimals and percentages. EVALUATE Choose an efficient method and check the result against a benchmark.							

Summer Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Summer 1 Unit 9 - Ratio and proportion	Solve ratio and proportion problems using multiplicative reasoning.	Ratio compares quantities multiplicatively and proportion describes part-whole relationships.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT solve ratio and proportion problems.	Small steps: use ratio language; scale quantities; solve proportion problems; use double number lines. No Oak unit- use Mastery of number materials No teaching guide	Multiplication, division, fractions and scaling.	Reasoning, fairness and real-life application.

Recurring disciplinary statements

I can move fluently between representations and justify their use.

I can generalise relationships and prove or disprove simple claims.

I can justify conclusions using precise mathematical language and evaluate mathematical arguments.

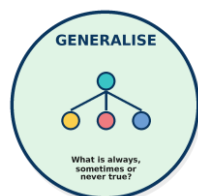
I can evaluate strategies and justify an efficient choice for the problem.

I can plan and adapt a systematic approach to unfamiliar multi-step problems.

I can check accuracy, efficiency and conclusions, then refine my approach.

Vocab	Ratio, proportion, scale factor, part, whole, multiplier.
Previous Knowledge Needed	Y5 fractions as operators, scaling and multiplicative relationships.

Explicit reasoning buttons and unit prompts

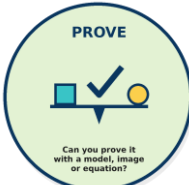


GENERALISE Explain why scaling both quantities by the same factor preserves a ratio.



CHALLENGE Does adding the same amount to both quantities preserve the ratio? Explain.

Summer Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Summer 1 Unit 10 - Calculating using knowledge of structures (2)	Apply structural knowledge to solve mixed calculation problems efficiently.	Known structures and equivalence can be used flexibly across operations.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT apply calculation structures flexibly.	Small steps: identify structure; choose operation; use equivalence; solve mixed problems; justify methods. NCETM Link Oak 18 Teaching Guide	Unit 1 structures and all four operations.	Independence and resilient problem solving.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Equivalence, compensation, constant, efficient, strategy.						
Previous Knowledge Needed	Y6 calculation structures and formal methods.						
Explicit reasoning buttons and unit prompts  CHALLENGE What changes if a number or operation changes? Adapt your approach.  EVALUATE Compare complete solutions for accuracy and efficiency, then refine yours.							

Summer Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Summer 2 Unit 12 - Order of operations	Use the order of operations to calculate accurately.	The order of operations determines how expressions with more than one operation are calculated.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT use the order of operations.	Small steps: identify operations; use brackets; compare expressions; solve multi-step calculations. NCETM Link Oak 20 No teaching guide	All four operations and equivalence.	Accuracy, precision and checking reasoning.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Order of operations, brackets, expression, equation, operation.						
Previous Knowledge Needed	Secure fluency in the four operations and known facts.						
Explicit reasoning buttons and unit prompts  PROVE Explain how brackets and operation order determine the result.  CHALLENGE Where could brackets go to change the result? Justify each possibility.							

Summer Term							
Threshold Concept	Endpoint (taken from skeleton document)	Substantive Knowledge	Disciplinary Knowledge	WALT	Suggested Activity/small Steps	Retrieval	SMSC and BV
Summer 2 Unit 13 - Mean average	Calculate and interpret the mean average.	The mean is a measure of average found by sharing a total equally between values.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT calculate and interpret the mean average.	Small steps: find totals; divide equally; interpret mean; solve comparison problems. NCETM Link Oak 21 No teaching guide	Division, statistics and interpreting data.	Evidence-based thinking and careful interpretation.
Recurring disciplinary statements I can move fluently between representations and justify their use. I can generalise relationships and prove or disprove simple claims. I can justify conclusions using precise mathematical language and evaluate mathematical arguments. I can evaluate strategies and justify an efficient choice for the problem. I can plan and adapt a systematic approach to unfamiliar multi-step problems. I can check accuracy, efficiency and conclusions, then refine my approach.							
Vocab	Mean, average, total, data set, value, interpret.						
Previous Knowledge Needed	Y6 statistics and division knowledge.						
Explicit reasoning buttons and unit prompts  CHALLENGE What happens to the mean when one value changes? Explain the effect.  EVALUATE Check the total and number of values, and explain how useful the mean is.							

Appendix: Progression Document Coverage Grid

Included with the Year 6 Mathematics Long Term Plan as a whole-school coverage check

Key: ✓ = explicit coverage in the strengthened LTPs; T = threaded/revisited through retrieval, fluency or reasoning; — = not statutory or not age-appropriate for that year.

Progression document endpoint / strand	Y1	Y2	Y3	Y4	Y5	Y6	Coverage note in strengthened LTPs
Number: Counting	✓	✓	✓	✓	✓	✓	Counting develops from 0-100 to 10,000,000, negative numbers and powers of 10.
Number: Representing	✓	✓	✓	✓	✓	✓	Concrete, pictorial and abstract representations, place value charts, number lines and measures.
Number: Comparing	✓	✓	✓	✓	✓	✓	Compare/order from quantities and two-digit numbers through to large numbers and decimals.
Number: Place value	✓	✓	✓	✓	✓	✓	Y1 early PV; Y2 tens/ones; Y3 1,000; Y4 10,000; Y5 1,000,000; Y6 10,000,000.
Number: Solving problems	✓	✓	✓	✓	✓	✓	Problem solving built into unit small steps, retrieval and reasoning expectations.
Add/Subtract: Complexity	✓	✓	✓	✓	✓	✓	From one-step practical problems to multi-step whole number and decimal problems.
Add/Subtract: Methods	✓	✓	✓	✓	✓	✓	Mental strategies, bridging, bar models, column methods and efficient written strategies.
Add/Subtract: Checking	✓	✓	✓	✓	✓	✓	Use of inverse operations, estimation, comparison and justification appears across the sequence.
Add/Subtract: Using number facts	✓	✓	✓	✓	✓	✓	Number bonds, facts within 20, complements, derived facts, efficient mental fluency.
Multiply/Divide: Complexity	T	✓	✓	✓	✓	✓	Y1 grouping/sharing threaded; Y2 onwards explicit arrays, equal groups, scaling and contexts.
Multiply/Divide: Methods	T	✓	✓	✓	✓	✓	Arrays, grouping, partitioning, written methods, short/long multiplication and division.
Multiply/Divide: Checking	T	T	✓	✓	✓	✓	Reasonableness, inverse relationships, remainders and strategy choice strengthened in KS2.
Multiply/Divide: Facts	T	✓	✓	✓	✓	✓	2, 5, 10 facts; 3, 4, 8; 6, 7, 9, 11, 12; then factors, multiples and primes.
Fractions: Counting in fractional steps	T	✓	✓	✓	✓	✓	Starts through equal parts and is developed through fractions on number lines and sequences.
Fractions: Recognising fractions	✓	✓	✓	✓	✓	✓	Halves/quarters secured, then unit/non-unit fractions, mixed numbers and improper fractions.
Fractions: Decimals	—	—	T	✓	✓	✓	Prepared through fractions; explicit decimals from Y4 and deepened in Y5/Y6.
Fractions: Equivalence	T	✓	✓	✓	✓	✓	Equal parts, fractions of shapes, equivalent fractions, decimals and percentages.
Fractions: Addition and subtraction	—	T	T	✓	✓	✓	Early composition prepares for explicit fraction calculation in UKS2.
Fractions: Multiplication/division of decimals	—	—	—	T	✓	✓	Decimal place value and scaling lead into multiplying/dividing decimals in Y5/Y6.
Fractions: Problem solving	✓	✓	✓	✓	✓	✓	Reasoning and application through sharing, measures, percentages, ratio and proportion.

Progression document endpoint / strand	Y1	Y2	Y3	Y4	Y5	Y6	Coverage note in strengthened LTPs
Shape: Identifying shapes/properties	✓	✓	✓	✓	✓	✓	Shape threaded and explicitly taught across all year groups at increasing depth.
Shape: Drawing and constructing	T	T	✓	✓	✓	✓	From practical construction to accurate drawing, composition/decomposition and coordinates.
Shape: Comparing and classifying	✓	✓	✓	✓	✓	✓	Sorting/comparing shapes progresses into classifying polygons, angles and 3-D properties.
Shape: Angles	T	T	✓	✓	✓	✓	Turns in KS1 prepare for right angles, angle comparison, measuring and reasoning.
Position, direction and movement	✓	✓	✓	✓	✓	✓	Position/turns in KS1 progress into coordinates, translation/reflection and grids.
Measures	✓	✓	✓	✓	✓	✓	Length, mass, capacity, time, money, perimeter, area, volume and unit conversion covered.
Statistics: Interpret/construct/present data	T	✓	✓	✓	✓	✓	Y2 explicit statistics strengthened; KS2 develops charts, graphs, tables and pie charts.
Statistics: Solving problems	T	✓	✓	✓	✓	✓	Data handling used for comparison, interpretation, two-step questions and mean.
Algebra: Equations	T	T	T	T	T	✓	Missing-number work and generalisation build towards explicit Y6 algebra.
Algebra: Formulae	—	—	—	T	T	✓	Perimeter/area relationships prepare for explicit formulae and volume in Y6.
Algebra: Sequences	T	T	T	T	T	✓	Counting patterns, multiples and term-to-term thinking build towards Y6 sequences.
Mathematical behaviours	✓	✓	✓	✓	✓	✓	Reasoning, explaining, justifying, representing and problem solving are embedded throughout.

Sequencing Rationale

Curriculum decision	Why this strengthens the plan
KS1 fluency protected	Number composition, counting, number bonds, place value and additive structures are prioritised before rushing breadth.
Shape and measures threaded	Shape/measure content is not removed; it is revisited through manipulatives, part-whole models, money, time, position and practical contexts.
KS2 reasoning strengthened	Multiplicative reasoning, scaling, fractions, decimals, ratio, statistics and algebraic thinking receive more deliberate space.
Challenge through depth	More complex learners are stretched through reasoning, non-routine problem solving and justification rather than acceleration.
Statutory coverage protected	Content moved within a key stage remains covered by the end of the relevant key stage and is mapped in the grid above.

This appendix is designed to support subject leadership monitoring, SLT scrutiny and governor/Ofsted conversations about curriculum coverage, progression and intentional sequencing.