

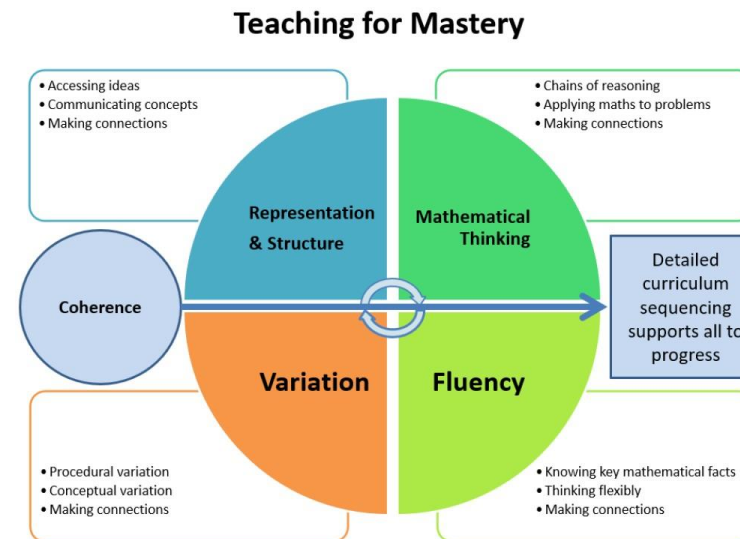


Devonshire Primary Academy
Year 5 Mathematics Long Term Plan 2026-2027



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 5

Shape is threaded through area, perimeter, volume, converting units, angles, position/direction and statistics. Pupils connect geometry to measure, scaling, graphs and problem solving.

Mapping: U7 area/perimeter/scaling; U12 converting units/time/imperial; U13 volume/capacity; U14 shape and angles; U15 position/direction and statistics.

Fluency Thread Through Year 5

Fluency develops through place value to 1,000,000, decimal fractions, money, written calculation, negative numbers, factors, multiples, primes, fractions and percentages.

Mapping: U1 place value; U2/U9 decimals; U3 addition/subtraction; U5 multiplication/division; U8 factors/multiples/primes; U10/U11 fractions and percentages.

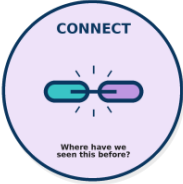
Year 5 disciplinary knowledge and reasoning

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 lower KS2 by testing generalisations, giving clear arguments and adapting strategies in unfamiliar contexts.

ing process	Year group statement
ent	I can select and connect representations to explain mathematical ideas.
patterns and connect	I can suggest general rules and test them with examples and counterexamples.
and justify	I can justify conclusions using known facts, precise language and a clear argument.
efficient strategies	I can compare strategies for efficiency and explain my choice.
nd solve problems	I can adapt known approaches to solve unfamiliar multi-step problems.
nd refine	I can evaluate accuracy and reasonableness, then refine my solution.

Existing year group buttons

 Describe a relationship and test when it is true.	 Connect this idea to previous learning and related facts.	 Explore what changes when a condition changes.	 Check accuracy and whether the answer makes sense.
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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 2 - Decimal Fractions	Understand tenths, hundredths and thousandths; read, write, order, compare and round decimals up to 3 places.	Decimals are fractions with denominators of 10, 100 and 1,000 and can be represented on number lines and in place value charts.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT understand decimal fractions to thousandths.	Small steps: represent tenths/hundredths/thousandths; decimal-fraction equivalents; compare/order to 3dp; round to whole/1dp; solve problems. NCETM Link Oak 1, Oak 2, Oak 3, Oak 4 Teaching Guide 1, Teaching Guide 2	Y4 tenths, hundredths and decimal equivalents.	Precision, resilience and careful reasoning.

Recurring disciplinary statements

I can select and connect representations to explain mathematical ideas.

I can suggest general rules and test them with examples and counterexamples.

I can justify conclusions using known facts, precise language and a clear argument.

I can compare strategies for efficiency and explain my choice.

I can adapt known approaches to solve unfamiliar multi-step problems.

I can evaluate accuracy and reasonableness, then refine my solution.

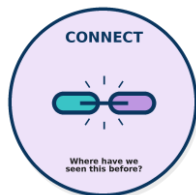
Vocab	Tenths, hundredths, thousandths, decimal point/number, ascending, descending, equivalent, round.
Previous Knowledge Needed	Y4 decimal fractions, hundredths, decimal place value and rounding to the nearest whole number.

Tenths, hundredths, thousandths, decimal point/number, ascending, descending, equivalent, round.

Previous Knowledge Needed

Y4 decimal fractions, hundredths, decimal place value and rounding to the nearest whole number.

Explicit reasoning buttons and unit prompts



CONNECT Connect a decimal to its fraction and place-value representations.



CHALLENGE Does a decimal with more digits always have a greater value? Test the 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 3 - Addition and Subtraction	Add and subtract whole numbers with more than 4 digits using formal written and mental methods; solve multi-step problems.	Columnar methods and mental strategies rely on place value. Rounding and inverse operations help check accuracy.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT add and subtract large numbers accurately.	Small steps: column addition/subtraction beyond 4 digits; mental strategies; estimate and round; inverse checks; missing numbers; multi-step problems. NCETM/Oak links where available	Y4 columnar addition/subtraction on up to 4 digits and estimating answers.	Accuracy, independence and explaining choices.

Recurring disciplinary statements

I can select and connect representations to explain mathematical ideas.

I can compare strategies for efficiency and explain my choice.

I can suggest general rules and test them with examples and counterexamples.

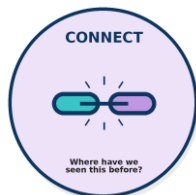
I can adapt known approaches to solve unfamiliar multi-step problems.

I can justify conclusions using known facts, precise language and a clear argument.

I can evaluate accuracy and reasonableness, then refine my solution.

Vocab	Columnar, exchange, regroup, estimate, inverse, difference, sum, multi-step, accuracy.
Previous Knowledge Needed	Y4 formal written addition and subtraction with up to 4 digits, estimation and inverse checking.

Explicit reasoning buttons and unit prompts



CONNECT How can a known calculation or equivalence simplify this problem?



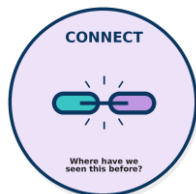
CHECK Use estimation and inverse operations to evaluate each step.

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 5 - Multiplication and Division	Multiply up to 4 digits by 1- or 2-digit numbers; divide up to 4 digits by 1 digit and interpret remainders.	Formal methods build on place value, partitioning and known facts. Powers of 10 scale whole numbers and decimals.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT use efficient multiplication and division methods.	Small steps: short multiplication; long multiplication by 2 digits; short division; interpret remainders as r/fraction/decimal/rounded; x/divide by 10/100/1,000; solve scaling/rate problems. NCETM Link Oak 7 , Oak 8 , Oak 9 Teaching Guide 1 , Teaching Guide 2	Y4 facts to 12 x 12 and written multiplication/division with exact answers.	Accuracy, resilience 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 7 - Area, Perimeter and Scaling	Calculate perimeter of composite rectilinear shapes; calculate and compare area and solve scaling problems.	Perimeter is distance around a shape. Area measures surface in square units. Scaling uses multiplicative relationships.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT calculate area, perimeter and scaling.	Small steps: find missing lengths; perimeter of composite rectilinear shapes; area of rectangles/squares in cm^2/m^2 ; estimate irregular area; scale drawings/problems. NCETM Link Oak 10 , Oak 11 , Oak 12 Teaching Guide 1 , Teaching Guide 2	Y4 area by counting squares, perimeter and multiplication facts.	Visual reasoning, perseverance and problem solving.

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 9 - Calculating with Decimal Fractions	Calculate with decimal fractions, including different decimal places, complements and problems up to 3 decimal places.	Decimal calculations use place value and can be solved mentally or with written methods and efficient checking.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT calculate accurately with decimal fractions.	Small steps: add/subtract decimals; bridge 1; complements of 1; decimal sequences; mixed whole/decimal calculations; solve measure contexts; check reasonableness. NCETM Link Oak 13 Teaching Guide 1 , Teaching Guide 2	Decimal fractions from Unit 2 and money contexts from Unit 6.	Accuracy and choosing efficient strategies.

Vocab	Decimetre, decimal fraction, complement, place value, exchange, sequence, reasonableness.
Previous Knowledge Needed	Understanding tenths, hundredths, thousandths and decimal comparison/order.



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 10 - Fractions	Compare, order, convert and calculate with fractions, including mixed numbers, improper fractions and multiplication by whole numbers.	Fractions can be equivalent, greater than 1, converted and used as operators to find parts of quantities.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT reason and calculate with fractions.	Small steps: equivalent fractions; compare/order related denominators; convert mixed/improper; add/subtract same or multiple denominators; multiply fractions/mixed numbers by whole numbers; fractions of quantities. NCETM Link Oak 18, Oak 19, Oak 20, Oak 21 Teaching Guide 1, Teaching Guide 2, Teaching Guide 3	Y4 fractions greater than 1 and equivalent fractions.	Precision, perseverance and reasoning with evidence.

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 11 - Percentages	Understand percent as parts per 100; write percentages as fractions/decimals and solve common equivalence problems.	Percentages, decimals and fractions are different ways of expressing proportions. 100% represents the whole.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT connect fractions, decimals and percentages.	Small steps: introduce %; percentages as fractions/decimals; 1%, 10%, 25%, 50%, 100%; equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$; denominators 10/25; solve problems.	Fractions and decimals from Units 2, 9 and 10.	Reasoning, confidence and real-life application.

Recurring disciplinary statements

I can select and connect representations to explain mathematical ideas.

I can suggest general rules and test them with examples and counterexamples.

I can justify conclusions using known facts, precise language and a clear argument.

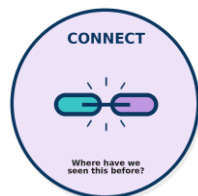
I can compare strategies for efficiency and explain my choice.

I can adapt known approaches to solve unfamiliar multi-step problems.

I can evaluate accuracy and reasonableness, then refine my solution.

Vocab	Percent, percentage, hundredths, equivalent, proportion, decimal, fraction, denominator.
Previous Knowledge Needed	Equivalent fractions, hundredths, decimals and fraction of quantities.

Explicit reasoning buttons and unit prompts



CONNECT Show why a fraction, decimal and percentage describe the same proportion.



CHECK Use a known equivalent to check a conversion.

Vocab	Metric, imperial, approximate, equivalence, convert, kilometre, metre, kilogram, gram, litre, millilitre, time.
Previous Knowledge Needed	Y4 converting units of measure, hours/minutes/seconds and decimal notation.

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 14 - Shape and Angles	Identify 3-D shapes from 2-D representations; measure/draw angles and reason with angle facts and polygons.	Angles are measured in degrees and classified. Shape properties and angle facts support deduction.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT measure and reason with shapes and angles.	Small steps: 2-D representations of 3-D shapes; draw/measure angles; acute/obtuse/reflex; angles at a point/straight line; multiples of 90°; rectangles; regular/irregular polygons. NCETM Link Oak 23	Y4 angles, right angles, symmetry and shape properties.	Accuracy, patience and systematic reasoning.

Recurring disciplinary statements

I can select and connect representations to explain mathematical ideas.

I can compare strategies for efficiency and explain my choice.

I can suggest general rules and test them with examples and counterexamples.

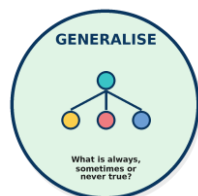
I can adapt known approaches to solve unfamiliar multi-step problems.

I can justify conclusions using known facts, precise language and a clear argument.

I can evaluate accuracy and reasonableness, then refine my solution.

Vocab	Degrees, protractor, acute, obtuse, reflex, straight line, around a point, polygon, regular, irregular, cuboid.
Previous Knowledge Needed	Y4 comparing angles, symmetry, quadrilaterals, triangles and properties of 2-D/3-D shapes.

Explicit reasoning buttons and unit prompts



GENERALISE Use known angle relationships to explain what must stay true.



CHECK Check a missing angle against the total on a line or around a point.

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 15 - Position, Direction and Statistics	Describe reflections/translations of shapes and solve problems using line graphs, tables and timetables.	Reflections and translations move shapes without changing them. Tables and line graphs organise information for comparison.	Represent Notice and connect Explain and justify Select strategies Apply Check and refine Year group statements below.	WALT describe transformations and interpret data.	Small steps: translate shapes on grids; reflect in lines parallel to axes; describe positions; line graphs; comparison/sum/difference questions; read tables and timetables.	Y4 coordinates in the first quadrant, translations, bar charts and time graphs.	Accuracy, communication and interpreting information responsibly.

Recurring disciplinary statements

I can select and connect representations to explain mathematical ideas.

I can compare strategies for efficiency and explain my choice.

I can suggest general rules and test them with examples and counterexamples.

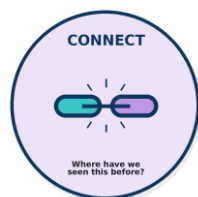
I can adapt known approaches to solve unfamiliar multi-step problems.

I can justify conclusions using known facts, precise language and a clear argument.

I can evaluate accuracy and reasonableness, then refine my solution.

Vocab	Reflection, translation, coordinate, axis, grid, line graph, table, timetable, interval, scale.
Previous Knowledge Needed	Y4 coordinates, movements on a grid, interpreting charts/tables and using scales.

Explicit reasoning buttons and unit prompts



CONNECT Connect the same position or information across grids, graphs and tables.



CHECK Check movements, scales and units before accepting a conclusion.

Appendix: Progression Document Coverage Grid

Included with the Year 5 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.