

GCSE Mathematics Scheme of Learning

Reach for the Star | 36 weekly modules | 108 lessons | three 60 minute lessons per week

Each week has a column plan for three numbered lessons. Find the matching L### folders in the learner and teacher packs. The lesson objective, learning cycle, extension and assessment are distinct columns so staff can adapt a module without losing the sequence of evidence.

Activate Learning lesson cycle

Connect & Check	Share	Present	Apply	Recall & Review
State the objective and running order; retrieve prerequisite knowledge and spot starting errors.	Learners explain and compare approaches with a partner; teacher draws out prior methods.	Model or uncover the new method, using learner responses and a contextual example.	Move from guided to independent work; remove scaffolds and check understanding.	Test the objective with a fresh question, correct an error and choose next practice.

Using the columns

Stretch and deep challenge are optional workbook tasks for learners ready to extend their reasoning. Assessment identifies the evidence to inspect, including the formative mini-test, independent working and an exit check. Answers and mark guidance are in the teacher folder. Use the deck, interactive or printable workbook, knowledge organiser and flipped learning as appropriate. A typical flow is 5 minutes connect, 7 share, 10 present, 25 apply, 8 recall and review, with 5 minutes to record feedback; adapt to learner responses.

The resource sequence is a review draft. Check tier, calculator conditions, specification coverage and local assessment arrangements before delivery. Keep a checkpoint after the content it diagnoses; move a weekly module only where its prerequisite knowledge is secure. Week 33 uses 45 minute selected sections of the mock rehearsals within a 60 minute lesson; timetable each full 90 minute paper separately if required.

Week 01 Signed numbers • Multiplication, division and order • Place value, decimals and estimation

L001–L003 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N1, N2, N3, N13, N14, N15

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L001 Signed numbers Objective: Order integers; signed addition/subtraction; explain and check.	State the objective and timeline. Retrieve prior number knowledge or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for signed numbers. Ask for a reason, not only an answer.	Model a worked example, use a paired problem, then remove prompts. Review a fresh independent check and reteach from errors	Complete independent practice on signed numbers. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Calculate $-18+27-35$ and check by grouping in a second way. Deep challenge: A learner claims subtracting a negative always gives a positive answer. Test the claim with a counterexample.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC core; optional C check.
L002 Multiplication, division and order Objective: Calculate with signed products, quotients and mixed operations; justify the order and check with an inverse.	State the objective and timeline. Retrieve signed numbers or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for multiplication, division and order. Ask for a reason, not only an answer.	Brackets first; then powers; then multiplication and division from left to right; then addition and subtraction from left to right. Equal-priority operations are not separate alphabetical steps	Complete independent practice on multiplication, division and order. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Calculate $48\div(-6)\times(-2)+5$, showing equal-priority operations left to right. Deep challenge: Insert brackets in $6+2\times5-4$ to make 36 and explain your choice.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L003 Place value, decimals and estimation Objective: Use place value to scale and compare decimals, round to stated accuracy, and judge whether a calculation is reasonable.	State the objective and timeline. Retrieve multiplication, division and order or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for place value, decimals and estimation. Ask for a reason, not only an answer.	For rounding, identify the retained place and inspect the next digit. At 5 or above, increase the retained digit; otherwise keep it. Carry where needed. For significant figures, begin at the first non-zero digit	Complete independent practice on place value, decimals and estimation. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Round 0.004976 to two significant figures and estimate 397×0.049 . Deep challenge: A number rounds to 3.50 to two decimal places. Give its interval and explain the excluded endpoint.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 02 Number diagnostic and repair • Factors multiples and primes • Fractions and equivalent forms

L004–L006 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N1, N2, N3, N14, N15, N4, N5, N10

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L004 Number diagnostic and repair Objective: Diagnose a number error, repair the method, and choose an independent check that tests the original calculation.	State the objective and timeline. Retrieve place value, decimals and estimation or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for number diagnostic and repair. Ask for a reason, not only an answer.	Keep the original calculation visible. Repeating the same incorrect method is not an independent check. A useful repair names the decision that went wrong and succeeds on a fresh question with the support removed	Complete independent practice on number diagnostic and repair. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A learner calculates –7–(–12)=–19. Locate the first error and repair it. Deep challenge: Create an independent check for 35×0.8=28 that does not simply repeat the multiplication.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Non-calculator core; optional calculator check.
L005 Factors multiples and primes Objective: Find and justify factors, prime factorisations, HCFs and LCMs; choose the right structure for a problem.	State the objective and timeline. Retrieve number diagnostic and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for factors multiples and primes. Ask for a reason, not only an answer.	List factors in pairs. For HCF select prime factors shared by both numbers, with the smaller powers. For LCM include every prime needed, with the larger powers. Check that HCF divides both and LCM is divisible by both	Complete independent practice on factors multiples and primes. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find the HCF and LCM of 84 and 126 using prime factors. Deep challenge: Two numbers have HCF 6, LCM 180 and one number 30. Find the other.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L006 Fractions and equivalent forms Objective: Explain equivalence, simplify fractions, convert mixed and improper forms and compare fractions exactly.	State the objective and timeline. Retrieve factors multiples and primes or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for fractions and equivalent forms. Ask for a reason, not only an answer.	Simplify by a common factor, preferably the HCF. For a mixed number, multiply wholes by the denominator, then add the numerator. For comparison, use equal denominators and compare numerators; keep the same whole	Complete independent practice on fractions and equivalent forms. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Simplify 42/70 and give two different fractions equivalent to it. Deep challenge: A fraction is equivalent to 5/8 and its numerator is 35. Find its denominator and justify.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 03 Fraction operations • Fraction reasoning and retrieval • Fractions decimals and percentages

L007–L009 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N2, N3, N8, N4, N5, N10, R3, R9

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L007 Fraction operations Objective: Calculate exactly with fractions using all four operations and explain why each method works.	State the objective and timeline. Retrieve fractions and equivalent forms or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for fraction operations. Ask for a reason, not only an answer.	For + or –, rename with a common denominator. For ×, multiply numerators and denominators; cancel common factors if useful. For ÷ by a non-zero fraction, multiply by its reciprocal because that makes the divisor 1	Complete independent practice on fraction operations. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Calculate 5/6–3/8 and 2/3×9/10, simplifying each. Deep challenge: A learner says 3/4÷2/5=6/20. Explain and correct.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L008 Fraction reasoning and retrieval Objective: Select, explain and check fraction methods; diagnose misconceptions and transfer a repaired method to a fresh problem.	State the objective and timeline. Retrieve fraction operations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for fraction reasoning and retrieval. Ask for a reason, not only an answer.	Attempt without prompts, identify the first incorrect decision, explain the repair, then solve a fresh matched problem. Use common units for +/- and a reciprocal for ÷	Complete independent practice on fraction reasoning and retrieval. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Without notes, calculate 7/12+5/18 and explain the common denominator. Deep challenge: Is 2/3+3/4 greater than 1? Show a method without decimals.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L009 Fractions decimals and percentages Objective: Convert between fractions, decimals and percentages, and compare proportions on a consistent basis.	State the objective and timeline. Retrieve fraction reasoning and retrieval or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for fractions decimals and percentages. Ask for a reason, not only an answer.	Choose a useful route: common denominator 100 for simple fractions, numerator ÷ denominator otherwise. Keep recurring values exact; 1/3 is 0.333... recurring, not exactly 0.33. Compare by changing all values into one form	Complete independent practice on fractions decimals and percentages. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Convert 7/20 into a decimal and percentage, then order it with 0.3 and 32%. Deep challenge: A learner claims 0.125=12.5/10 percent. Correct the conversion.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 04 Fractions and percentages of amounts • Percentage change and reverse percentages • Number checkpoint and feedback

L010–L012 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N11, N12, R3, R9, N2, N4, N8, N10

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L010 Fractions and percentages of amounts Objective: Use fractions and percentages as operators, recover a whole from a known fraction, and explain the chosen reference amount.	State the objective and timeline. Retrieve fractions decimals and percentages or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for fractions and percentages of amounts. Ask for a reason, not only an answer.	Name the whole and write the fraction or decimal multiplier. Calculate, include units and check size. To recover a whole from a known fraction, find one part then all parts, or divide by the fraction	Complete independent practice on fractions and percentages of amounts. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find 35% of £240 using 10%, 5% and a combination. Deep challenge: A class has 18 of 24 learners present. Express attendance as a simplified fraction and percentage.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L011 Percentage change and reverse percentages Objective: Use multipliers for percentage change, recover an original value and distinguish simple interest from repeated growth.	State the objective and timeline. Retrieve fractions and percentages of amounts or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for percentage change and reverse percentages. Ask for a reason, not only an answer.	Identify which value represents 100%. Write new = original × multiplier, then multiply forwards or divide backwards. Percentage change = change ÷ original × 100%	Complete independent practice on percentage change and reverse percentages. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A coat costs £68 after a 15% reduction. Find its original price. Deep challenge: A price rises 20% and then falls 20%. Explain the net change using multipliers.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L012 Number checkpoint and feedback Objective: Demonstrate cumulative number understanding, diagnose the cause of an error and verify a repair independently.	State the objective and timeline. Retrieve percentage change and reverse percentages or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for number checkpoint and feedback. Ask for a reason, not only an answer.	Complete R1–R3 unaided as a short checkpoint. Tag each error: units, operation, scale or reference whole. Use the matching D example, then A and P tasks without the prompt	Complete independent practice on number checkpoint and feedback. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve 3/5 of x=42 and 0.2x=18. Deep challenge: Diagnose why 50% increase followed by 50% decrease does not restore the start.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 05 Ratio and sharing • Scale and proportion • Unit rates and best buys

L013–L015 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N11, R4, R5, R6, R8, R1, R2, R7, R10, R11

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L013 Ratio and sharing Objective: Interpret ratios, simplify them and share quantities using equal parts while distinguishing part-to-part from part-to-whole.	State the objective and timeline. Retrieve number checkpoint and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for ratio and sharing. Ask for a reason, not only an answer.	Keep the named order and convert quantities to matching units before simplifying. To share a total, add ratio parts, divide the total by that sum, then multiply for each share	Complete independent practice on ratio and sharing. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Split £126 in ratio 2:3:4 and check the parts total. Deep challenge: A sum is split A:B=3:5 and B:C=2:3. Find A:B:C in whole numbers.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L014 Scale and proportion Objective: Use constant multiplicative relationships for recipes and length scales, with consistent units and checks.	State the objective and timeline. Retrieve ratio and sharing or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for scale and proportion. Ask for a reason, not only an answer.	State corresponding quantities and units. Use a unit rate or one scale factor across a direct-proportion table	Complete independent practice on scale and proportion. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A scale drawing is 1:25,000. What actual distance does 8 cm represent? Deep challenge: Similar shapes have length factor 1.5. Compare their area factor and explain.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L015 Unit rates and best buys Objective: Compare prices using a common unit. Interpret the best buy in terms of cost, quantity needed and waste.	State the objective and timeline. Retrieve scale and proportion or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for unit rates and best buys. Ask for a reason, not only an answer.	Choose a common unit and label it. Divide each cost by its quantity, compare unrounded results, then consider the amount actually needed. Multiply back to check	Complete independent practice on unit rates and best buys. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A 750 g pack costs £2.40 and a 1.2 kg pack costs £3.60. Which is better value per kg? Deep challenge: A 20% discount applies to the 750 g pack. Does the best buy change?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 06 Proportion problems and repair • Algebraic language and substitution • Collect expand and factorise

L016–L018 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: R4, R5, R7, R10, A1, A2, A3, A4

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L016 Proportion problems and repair Objective: Select and justify a proportion method. Diagnose whether the given amount is a total, a share or a difference.	State the objective and timeline. Retrieve unit rates and best buys or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for proportion problems and repair. Ask for a reason, not only an answer.	Label the ratio parts and the meaning of the known amount. Find one part or one unit; scale to the target. Check the original ratio and the stated total or difference	Complete independent practice on proportion problems and repair. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Four workers complete a job in 15 hours at constant rate. How long would six workers take? Deep challenge: Explain why doubling workers may fail to halve time in a real job.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Non-calculator core; optional calculator check.
L017 Algebraic language and substitution Objective: Read algebraic notation accurately. Substitute signed values and distinguish expressions, equations and identities.	State the objective and timeline. Retrieve proportion problems and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for algebraic language and substitution. Ask for a reason, not only an answer.	Write the replacement in brackets, then use operation priority. Keep multiplication distinct from powers. Check by a second calculation and state any excluded value when division is involved	Complete independent practice on algebraic language and substitution. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: If a=-2 and b=5, evaluate 3a ² –2b and 2(a+b). Deep challenge: A learner interprets 3x ² as (3x) ² . Use x=2 to expose the error.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L018 Collect expand and factorise Objective: Collect like terms, expand a single bracket and factorise a common factor. Explain how these equivalent forms are connected.	State the objective and timeline. Retrieve algebraic language and substitution or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for collect expand and factorise. Ask for a reason, not only an answer.	Group only like terms. Multiply every term inside a bracket, including its sign. To factorise, take a common factor from every term. Expand again and substitute a value to check	Complete independent practice on collect expand and factorise. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Expand and simplify 3(2x–5)–2(x+4). Deep challenge: Factorise 6x ² +9x fully and check by expansion.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 07 Linear equations • Equations in contexts • Formulae and rearranging

L019–L021 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A17, A21, A2, A5

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L019 Linear equations Objective: Solve linear equations while preserving equality. Check solutions in the original equation, including unknowns on both sides.	State the objective and timeline. Retrieve collect expand and factorise or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for linear equations. Ask for a reason, not only an answer.	Simplify brackets first. Subtract an unknown term from both sides if needed. Undo addition or subtraction, then multiplication or division. Substitute into the original equation and compare both sides	Complete independent practice on linear equations. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $5(2x-1)=3x+16$ and check. Deep challenge: Explain why dividing $3x+6=12$ by 3 gives $x+6=4$ incorrectly.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L020 Equations in contexts Objective: Translate a context into a linear equation, solve it and interpret the result with appropriate units and constraints.	State the objective and timeline. Retrieve linear equations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for equations in contexts. Ask for a reason, not only an answer.	Define the unknown with units. Translate each relationship, keeping one-off charges separate. Solve using balanced operations. Substitute and check the result against the context	Complete independent practice on equations in contexts. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A taxi charges £3.50 plus £1.80 per mile. Find miles travelled for a £21.50 fare. Deep challenge: A rectangle's perimeter is 38 cm and its length is 3 cm more than width. Find dimensions.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L021 Formulae and rearranging Objective: Substitute into formulae and change the subject by inverse operations. State necessary restrictions and check with values.	State the objective and timeline. Retrieve equations in contexts or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for formulae and rearranging. Ask for a reason, not only an answer.	Identify the required subject and undo operations in reverse order on both sides. Keep grouped numerators in brackets. Check by substitution into both versions; do not divide by zero	Complete independent practice on formulae and rearranging. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Rearrange $A=\pi r^2$ for positive r , then find r when $A=49\pi\text{ cm}^2$. Deep challenge: Rearrange $v=u+at$ for t and identify when the rearrangement is invalid.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 08 Inequalities and number lines • Sequences and nth terms • Cumulative checkpoint and feedback

L022–L024 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A3, A22, A23, A24, A25, N2, N8, R5, R9, A2, A4, A17

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L022 Inequalities and number lines Objective: Solve linear inequalities and represent solution sets on number lines. Explain endpoint inclusion and order reversal.	State the objective and timeline. Retrieve formulae and rearranging or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for inequalities and number lines. Ask for a reason, not only an answer.	Solve using balanced operations. Reverse the inequality when multiplying or dividing by a negative number. Mark the endpoint and direction, then test one value inside and one outside the set	Complete independent practice on inequalities and number lines. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $3-2x<11$ and show the solution in words. Deep challenge: Why does dividing $-3x\geq 12$ by -3 reverse the sign? Give a numerical check.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L023 Sequences and nth terms Objective: Generate and recognise sequences. Find a linear nth-term rule and use it to decide whether a value belongs.	State the objective and timeline. Retrieve inequalities and number lines or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for sequences and nth terms. Ask for a reason, not only an answer.	Inspect differences and ratios before choosing a pattern. For linear sequences write $dn+c$, use $n=1$ to find c and test more terms. To test membership, solve for n and require a positive integer	Complete independent practice on sequences and nth terms. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find nth term of 4,9,14,19,... and its 25th term. Deep challenge: Can 7,11,15,19,... contain 100? Justify algebraically.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.
L024 Cumulative checkpoint and feedback Objective: Use independent evidence across number, proportion and algebra to identify a specific error and demonstrate a repaired method.	State the objective and timeline. Retrieve sequences and nth terms or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint and feedback. Ask for a reason, not only an answer.	Attempt Recall without notes. Choose one matched Discover repair. Use new Apply questions without the scaffold, then take the exit check. Record support and a delayed independent attempt; do not infer a grade from this small sample	Complete independent practice on cumulative checkpoint and feedback. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $2x+5=17$, then give the third term of $3n+2$. Deep challenge: A learner extends 2,5,8,11 with 15. Diagnose and find the 20th term.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Non-calculator core; optional calculator check.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 09 Angle facts and parallel lines • Triangles and polygons • Congruence and geometric reasoning

L025–L027 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: G1, G3, G4, G5, G6

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L025 Angle facts and parallel lines Objective: Calculate missing angles and justify each step using named angle facts and marked parallel lines.	State the objective and timeline. Retrieve cumulative checkpoint and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for angle facts and parallel lines. Ask for a reason, not only an answer.	Mark known angles and parallel arrows. Identify a relationship before calculating. Write an equality or sum, solve, then check the angle type. Use the diagram sheet to trace the relevant rays	Complete independent practice on angle facts and parallel lines. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Two parallel lines have co-interior angles $3x+10$ and $2x+20$. Find x . Deep challenge: A student says alternate angles always add to 180° . Correct the claim.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator reasoning. Optional check: $95+85=180$. A calculator cannot identify an angle relationship..
L026 Triangles and polygons Objective: Derive angle sums and use triangle, quadrilateral and regular-polygon properties to solve problems.	State the objective and timeline. Retrieve angle facts and parallel lines or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for triangles and polygons. Ask for a reason, not only an answer.	Decide whether an angle sum or a single regular angle is needed. Use equal sides to identify equal opposite angles. Check regularity before dividing a sum by n	Complete independent practice on triangles and polygons. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find each interior angle of a regular 15-sided polygon. Deep challenge: A regular polygon has interior angle 165° . Find its number of sides.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Optional check after A2: $15\times24=360$. Angle sums are exact; do not round the number of sides..
L027 Congruence and geometric reasoning Objective: Select a valid triangle congruence criterion and use corresponding parts to build a short proof.	State the objective and timeline. Retrieve triangles and polygons or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for congruence and geometric reasoning. Ask for a reason, not only an answer.	Write vertices in corresponding order. List each equality with its given reason, name the criterion, then deduce equal matching parts. A shared side equals itself; a picture is not proof	Complete independent practice on congruence and geometric reasoning. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: State a valid congruence test for sides 5,7,8 cm in two triangles and explain. Deep challenge: Two triangles have equal side lengths 5 and 7 cm and a non-included equal angle. Must they be congruent?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. No calculator is needed. Length totals can be checked, but congruence requires reasons, not numerical output..

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 10 Constructions and loci • Coordinates and transformations • Enlargement and scale factors

L028–L030 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: G1, G2, G15, A8, G7, G11, G24, R2

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L028 Constructions and loci Objective: Use ruler and compass constructions and interpret loci as sets of points satisfying distance conditions.	State the objective and timeline. Retrieve congruence and geometric reasoning or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for constructions and loci. Ask for a reason, not only an answer.	Use a sharp pencil, straightedge and compass; leave arcs visible. For a perpendicular from a point, an arc centred there cuts the line twice; bisect that segment and join to the point	Complete independent practice on constructions and loci. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Construct the perpendicular bisector of an 8 cm segment. How far is its midpoint from either endpoint? Deep challenge: A point is 3 cm from A and 4 cm from B. Describe the intersection of its loci.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. No calculator needed. Practical construction quality is teacher reviewed. Use a ruler to check distances and a protractor to check right angles after constructing; they do not replace compass evidence..
L029 Coordinates and transformations Objective: Transform points and shapes by translation, reflection and rotation, and describe each transformation completely.	State the objective and timeline. Retrieve constructions and loci or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for coordinates and transformations. Ask for a reason, not only an answer.	Plot vertices accurately; transform each one; join in the same order. Describe translation by a vector, reflection by a line equation, rotation by angle, direction and centre. Check lengths and orientation	Complete independent practice on coordinates and transformations. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Translate (–3,4) by (5,–7) and reflect the result in the x-axis. Deep challenge: Do reflection and translation always commute? Use a point and transformations as a counterexample.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. No calculator needed. Check each coordinate separately; use squared distance from the centre if verifying a rotation numerically, but do not rely on a single vertex to describe a whole shape..
L030 Enlargement and scale factors Objective: Enlarge shapes from a stated centre, including positive fractional factors, and explain how centre and factor determine the image.	State the objective and timeline. Retrieve coordinates and transformations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for enlargement and scale factors. Ask for a reason, not only an answer.	Draw rays from the centre through vertices. Multiply each centre-to-vertex distance by k; join images in order. Check a side-length ratio and one ray. The centre remains fixed	Complete independent practice on enlargement and scale factors. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Enlarge a rectangle 3 cm by 5 cm by factor 2.5. Find new area. Deep challenge: An enlargement factor is –2 about the origin. Where does (3,–4) map, and what happens to orientation?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Optional check: for C(1,1), P(2,3), k=2, calculate 1+2×(2–1) and 1+2×(3–1). Expect 3 and 5. Brackets preserve the displacement calculation..

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 11 Bearings and scale drawings • Geometry checkpoint and feedback • Perimeter and compound area

L031–L033 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: G15, R1, R2, G2, G3, G5, G7, G14, G16, G17

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L031 Bearings and scale drawings Objective: Interpret three-figure bearings and construct scale drawings with accurate distance and direction.	State the objective and timeline. Retrieve enlargement and scale factors or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for bearings and scale drawings. Ask for a reason, not only an answer.	Mark the start, north arrow and clockwise bearing. Convert distance to drawing length. Draw and label the endpoint. To reverse, add or subtract 180°. Check quadrant and real-distance conversion	Complete independent practice on bearings and scale drawings. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A map scale is 1 cm:4 km. Two points are 7.5 cm apart. Find actual distance. Deep challenge: The bearing of B from A is 065°. Find the bearing of A from B.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Optional numerical check for A3 only: sqrt(6²+4²) is about 7.21 km; this Pythagoras method is taught later. Use drawing as the core method. Numeric retrieval accepts 90 for 090; the teacher checks three-figure bearing notation..
L032 Geometry checkpoint and feedback Objective: Use independent geometry evidence to identify misconceptions, complete a targeted repair and demonstrate transfer.	State the objective and timeline. Retrieve bearings and scale drawings or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for geometry checkpoint and feedback. Ask for a reason, not only an answer.	Attempt Recall unaided. Select a matching worked repair; explain the change. Complete Apply and Prove independently. Use the practical sheet for a drawing check and keep its evidence separately from numeric retrieval	Complete independent practice on geometry checkpoint and feedback. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A regular hexagon has side 6 cm. Find perimeter and each exterior angle. Deep challenge: A shape is enlarged by factor 3 and its original perimeter is 18 cm. A learner says new area is three times. Correct the reasoning.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Use a non-calculator first attempt. In the practical repair, a calculator may check unit conversions; assess geometric reasoning and drawing separately..
L033 Perimeter and compound area Objective: Calculate perimeters and areas of compound rectilinear shapes, triangles, parallelograms and trapezia with correct units.	State the objective and timeline. Retrieve geometry checkpoint and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for perimeter and compound area. Ask for a reason, not only an answer.	Label missing lengths. Trace the outer boundary for perimeter. For area, choose non-overlapping pieces or subtract a cut-out. State square units. Estimate and use a second partition to check	Complete independent practice on perimeter and compound area. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A rectangle 12 cm by 8 cm has a 3 cm by 2 cm corner cut out. Find area and perimeter. Deep challenge: Two shapes each have area 36 cm². Must their perimeters be equal? Give a counterexample.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Optional check: (5+9)×4÷2=28. Enter brackets round the sum. Estimate first; a triangle with the same base and height has half the parallelogram area..

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 12 Circles arcs and sectors • Prisms and cylinders • Surface area and volume

L034–L036 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: G9, G17, G18, R1, G12, G14, G16

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L034 Circles arcs and sectors Objective: Calculate circle circumference and area, arc length and sector area, distinguishing curved length from the full sector perimeter.	State the objective and timeline. Retrieve perimeter and compound area or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for circles arcs and sectors. Ask for a reason, not only an answer.	Mark radius versus diameter. Decide whether the question asks for length or area. Use the central-angle fraction, retain π or full calculator precision, then round once at the end	Complete independent practice on circles arcs and sectors. Correct one error, then complete the pack’s next-lesson preparation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A sector has radius 9 cm and angle 80°. Find arc length and area exactly. Deep challenge: A learner finds the perimeter of a semicircle of radius 5 cm as 5π cm. Explain the missing part.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Calculator required for A3 only; other tasks use exact π forms. Enter $10\times\pi$ and $\pi\times5^2$, retaining full precision until rounding to 1 decimal place. Numeric retrieval asks for coefficients of π , not the full symbolic answer..
L035 Prisms and cylinders Objective: Calculate prism and cylinder volumes from cross-sectional area and length.	State the objective and timeline. Retrieve circles arcs and sectors or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for prisms and cylinders. Ask for a reason, not only an answer.	Compare a prism with a non-prism; connect layers to volume	Practise volume and convert cubic units Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A prism has a trapezium cross-section with parallel sides 4 cm and 8 cm and height 3 cm. Its length is 11 cm. Find the volume. Deep challenge: A cylinder and a triangular prism both have cross-sectional area 24 cm ² and length 7 cm. Compare their volumes and explain.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L036 Surface area and volume Objective: Find surface area and volume using appropriate nets and formulae.	State the objective and timeline. Retrieve prisms and cylinders or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for surface area and volume. Ask for a reason, not only an answer.	Unfold a solid; distinguish exposed area from capacity	Sketch a net and check units in a volume solution Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A closed cuboid has volume 120 cm ³ and dimensions 4 cm by 5 cm by h. Find h and surface area. Deep challenge: A cylinder has radius r and height 2r. Express its total surface area and volume in terms of r.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 13 Plans elevations and measures • Pythagoras in two dimensions • Trigonometry in right triangles

L037–L039 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: G12, G13, G6, G20, G21

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L037 Plans elevations and measures Objective: Interpret plans and elevations and connect views to three-dimensional objects.	State the objective and timeline. Retrieve surface area and volume or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for plans elevations and measures. Ask for a reason, not only an answer.	Build or sketch a solid from two views; test whether a third view is determined	Match solids and views; explain an ambiguity Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A scale plan measures 6 cm by 4 cm at 1:100. Find the real floor area in m ² . Deep challenge: Two solids have identical front and side elevations. Must their plans be identical? Explain with an example.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L038 Pythagoras in two dimensions Objective: Use Pythagoras to find a missing length in a right-angled triangle.	State the objective and timeline. Retrieve plans elevations and measures or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for pythagoras in two dimensions. Ask for a reason, not only an answer.	Identify the hypotenuse before forming an equation; contrast missing long and short sides	Solve varied right-triangle problems and check magnitude Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A rectangle is 9 cm by 12 cm. Find its diagonal and the perimeter of one of the right triangles formed by that diagonal. Deep challenge: A triangle has sides 8, 15 and 17 cm. Prove it is right-angled and find its area.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L039 Trigonometry in right triangles Objective: Select sine, cosine or tangent to find a right-triangle side or angle.	State the objective and timeline. Retrieve pythagoras in two dimensions or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for trigonometry in right triangles. Ask for a reason, not only an answer.	Label sides relative to the given angle; model degree-mode and inverse-function checks	Mix missing-side and missing-angle questions; justify the ratio Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A right triangle has adjacent side 8 cm and an angle of 35°. Find the opposite side to 2 d.p. Deep challenge: Two right triangles share angle 30° but have hypotenuses 10 cm and 25 cm. Compare their opposite sides.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 14 Cumulative checkpoint 2 and feedback • Coordinates gradient and intercept • Straight line equations

L040–L042 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N14, G20, G21, A8, A9, A10, R8, A17

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L040 Cumulative checkpoint 2 and feedback Objective: Apply and explain earlier number, algebra and geometry independently.	State the objective and timeline. Retrieve trigonometry in right triangles or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint 2 and feedback. Ask for a reason, not only an answer.	Use a cumulative diagnostic; analyse method errors before matched reteaching	Correct one error and solve a fresh delayed question Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A cylinder has radius 4 cm and height 5 cm. Find its volume exactly, then state the units of surface area. Deep challenge: A learner uses $8^2+15^2=17$ in a Pythagoras check. Identify and repair the error.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L041 Coordinates gradient and intercept Objective: Plot coordinates and interpret gradient and vertical intercept.	State the objective and timeline. Retrieve cumulative checkpoint 2 and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for coordinates gradient and intercept. Ask for a reason, not only an answer.	Connect a coordinate table, a straight line and a change in height per horizontal step	Plot lines and explain positive, zero and negative gradients Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A line passes through (−3, 4) and (3, −2). Find gradient and y-intercept. Deep challenge: Can two distinct parallel lines have different gradients? Explain using $y=mx+c$.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L042 Straight line equations Objective: Form and use straight-line equations and locate intersections.	State the objective and timeline. Retrieve coordinates gradient and intercept or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for straight line equations. Ask for a reason, not only an answer.	Compare tables, graphs and equations; link equal gradients to parallel lines	Find line equations and check points by substitution Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find the equation of the line through (2,−1) and (6,7). Deep challenge: The lines $y=3x-4$ and $6x-2y=8$ are claimed to intersect. Test the claim.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 15 Distance time and speed graphs • Graph problems and repair • Sampling and data quality

L043–L045 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A10, A14, R14, Cumulative, previously, taught, statements, S1, S5

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L043 Distance time and speed graphs Objective: Interpret distance–time and speed–time graphs in context.	State the objective and timeline. Retrieve straight line equations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for distance time and speed graphs. Ask for a reason, not only an answer.	Distinguish height from gradient; connect area under a speed graph to distance	Explain a journey and check units in a rate calculation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A runner covers 400 m in 80 s, rests for 20 s, then covers 200 m in 40 s. Find average speed for the whole journey. Deep challenge: A distance-time graph has a downward segment. Explain what the vertical axis must represent if the graph is valid.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L044 Graph problems and repair Objective: Choose graphical methods and repair errors in interpreting axes and gradients.	State the objective and timeline. Retrieve distance time and speed graphs or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for graph problems and repair. Ask for a reason, not only an answer.	Compare two incorrect graphs; reteach scale or gradient from diagnostic evidence	Redraw one graph and solve an unfamiliar context Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A journey has two equal 30 km legs at 30 km/h and 60 km/h. Find overall average speed. Deep challenge: Explain why the mean of 30 and 60 is not the overall speed for equal distances.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L045 Sampling and data quality Objective: Recognise populations, samples, bias and limits of conclusions.	State the objective and timeline. Retrieve graph problems and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for sampling and data quality. Ask for a reason, not only an answer.	Compare survey designs and identify which groups may be excluded	Improve a sampling plan and state a remaining limitation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A school has 800 learners, 200 in Year 11. How many Year 11 learners belong in a proportional sample of 64? Deep challenge: A survey about canteen food is sent only to the school's sports team. Give two distinct sources of bias and improve selection.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 16 Tables charts and time series • Averages and spread • Statistical comparisons

L046–L048 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: S2, S4, S5

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L046 Tables charts and time series Objective: Represent and interpret categorical data, grouped data and time series.	State the objective and timeline. Retrieve sampling and data quality or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for tables charts and time series. Ask for a reason, not only an answer.	Choose a suitable chart; check labels, scale and misleading presentation	Construct a chart and explain one supported conclusion Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A pie chart represents 72 people. A sector angle is 135°. Find its frequency. Deep challenge: A time-series graph starts its vertical axis at 90 instead of 0. Does this make the data wrong? Explain the risk.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L047 Averages and spread Objective: Calculate and interpret averages and range, including grouped estimates.	State the objective and timeline. Retrieve tables charts and time series or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for averages and spread. Ask for a reason, not only an answer.	Contrast exact data with grouped estimates; explore the effect of an outlier	Compare summaries and justify a suitable average Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Five numbers have mean 12. Four are 8, 11, 13 and 15. Find the fifth and the range. Deep challenge: A data set has mean 10. One new value of 100 is added. Must the median increase?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L048 Statistical comparisons Objective: Compare distributions using context, a typical value and spread.	State the objective and timeline. Retrieve averages and spread or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for statistical comparisons. Ask for a reason, not only an answer.	Model a comparison supported by two statistics; critique an unsupported claim	Write a balanced comparison and identify missing evidence Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Class A has median 14 and IQR 3; class B median 16 and IQR 9. Compare typical score and consistency. Deep challenge: Two groups share mean 20. One has range 2 and the other 30. What can and cannot be concluded?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 17 Probability and expected frequency • Sample spaces and systematic lists • Venn diagrams and set notation

L049–L051 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N5, P1, P2, P3, P4, P5, P6, P7

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L049 Probability and expected frequency Objective: Use the probability scale and calculate expected frequency.	State the objective and timeline. Retrieve statistical comparisons or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for probability and expected frequency. Ask for a reason, not only an answer.	Connect equally likely outcomes with long-run expectation; distinguish expectation from certainty	Calculate expected counts and explain variation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A biased coin shows heads 78 times in 120 tosses. Estimate heads in the next 400 tosses. Deep challenge: Why is an expected frequency of 26 not a guarantee of exactly 26 successes?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L050 Sample spaces and systematic lists Objective: List outcomes systematically and calculate probabilities from sample spaces.	State the objective and timeline. Retrieve probability and expected frequency or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for sample spaces and systematic lists. Ask for a reason, not only an answer.	Construct a table or tree; check that outcomes are exhaustive and equally likely	Solve combined-choice problems and explain the counting method Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Two fair dice are rolled. Count the outcomes with a sum of 9 and find the probability. Deep challenge: A learner lists (1,3) and (3,1) as one outcome when two distinct dice are rolled. Explain the effect.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L051 Venn diagrams and set notation Objective: Interpret Venn diagrams and use set notation in probability.	State the objective and timeline. Retrieve sample spaces and systematic lists or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for venn diagrams and set notation. Ask for a reason, not only an answer.	Place overlaps first and account for outcomes outside the sets	Complete a diagram and distinguish union from intersection Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Of 50 learners, 24 study art, 22 music and 8 both. Find how many study exactly one. Deep challenge: If P(A)=0.6, P(B)=0.5 and P(A∩B)=0.2, find P(neither).	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 18 Cumulative checkpoint 3 and feedback • Powers roots and index laws • Standard form

L052–L054 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Cumulative, previously, taught, statements, N3, N6, N7, N9

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L052 Cumulative checkpoint 3 and feedback Objective: Apply and explain earlier graphs, statistics, probability and number independently.	State the objective and timeline. Retrieve venn diagrams and set notation or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint 3 and feedback. Ask for a reason, not only an answer.	Use cumulative assessment and error analysis to choose reteaching	Correct a misconception and attempt a fresh mixed problem Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A line has equation $y=-3x+4$. Find its gradient and y when $x=-2$. Deep challenge: A student says a probability of 1.2 is possible because it came from a frequency table. Diagnose the error.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L053 Powers roots and index laws Objective: Use powers, roots and index laws with valid conditions.	State the objective and timeline. Retrieve cumulative checkpoint 3 and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for powers roots and index laws. Ask for a reason, not only an answer.	Compare repeated multiplication with laws; test a false rule using a counterexample	Simplify indices and explain one valid law Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Simplify $(3x^2y^3)(2x^4y)$ and state any assumptions. Deep challenge: Is $x^5+x^3=x^8$? Show why or give a counterexample.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L054 Standard form Objective: Convert to and from standard form and perform calculations.	State the objective and timeline. Retrieve powers roots and index laws or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for standard form. Ask for a reason, not only an answer.	Connect powers of ten to place value; check whether the coefficient is in range	Compare large and small quantities and estimate a calculation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Write 0.00000056 in standard form, then multiply it by 3×10^5 . Deep challenge: Explain why 12×10^4 is not in standard form and rewrite it.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 19 Rounding error intervals and bounds • Number accuracy pathway • Quadratic expressions

L055–L057 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N14, N15, N16, N8, A4

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L055 Rounding error intervals and bounds Objective: Describe rounding intervals and reason about limits of accuracy.	State the objective and timeline. Retrieve standard form or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for rounding error intervals and bounds. Ask for a reason, not only an answer.	Use number lines to distinguish included and excluded endpoints	State error intervals; Higher learners calculate bounds Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A rectangle is 8.2 cm by 5.6 cm to the nearest 0.1 cm. Find its lower area bound. Deep challenge: A rounded length is 10 cm to nearest cm. Is 10.5 cm included? Explain.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L056 Number accuracy pathway Objective: Select appropriate exact or approximate forms and explain accuracy.	State the objective and timeline. Retrieve rounding error intervals and bounds or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for number accuracy pathway. Ask for a reason, not only an answer.	Foundation: rounding and estimation repair. Higher: surds, rationalisation and calculated bounds	Complete a tier-matched accuracy task and justify precision Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Estimate 398×0.051 to one significant figure, then calculate exactly. Deep challenge: A measurement rounds to 1.20 to two decimal places. State the interval and explain why 1.205 is excluded.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L057 Quadratic expressions Objective: Expand and factorise quadratic expressions using structure.	State the objective and timeline. Retrieve number accuracy pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for quadratic expressions. Ask for a reason, not only an answer.	Connect area models to products; reverse expansion to check factors	Alternate expansion and factorisation with explanation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Factorise $2x^2+7x+3$ and check by expansion. Deep challenge: A learner writes $(x-4)(x+2)=x^2-8$. Find the missing terms.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 20 Quadratic graphs and roots • Solving quadratics • Algebra pathway and repair

L058–L060 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A11, A12, A18

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L058 Quadratic graphs and roots Objective: Plot quadratic graphs and interpret roots and key features.	State the objective and timeline. Retrieve quadratic expressions or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for quadratic graphs and roots. Ask for a reason, not only an answer.	Link factors, zeros and intercepts; distinguish graph estimates from exact roots	Sketch and read quadratic graphs; check roots by substitution Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: For $y=x^2-4x+3$, find both roots and the turning point. Deep challenge: A quadratic has roots -1 and 5 . Write a monic equation and state its axis of symmetry.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L059 Solving quadratics Objective: Solve quadratic equations using tier-appropriate methods.	State the objective and timeline. Retrieve quadratic graphs and roots or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for solving quadratics. Ask for a reason, not only an answer.	Start with factorisation and the zero-product property; Higher: formula and completing the square	Solve varied equations and substitute to check solutions Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $3x^2-12x=0$ and check both roots. Deep challenge: Explain why dividing $x^2=9$ by x can lose a solution.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L060 Algebra pathway and repair Objective: Choose an algebraic method and repair an identified misconception.	State the objective and timeline. Retrieve solving quadratics or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for algebra pathway and repair. Ask for a reason, not only an answer.	Foundation: linear and simple quadratic work. Higher: compare quadratic methods and forms	Correct a worked solution and solve a new equation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $2(x+4)=3x-5$ and check by substitution. Deep challenge: A learner cancels x from $x^2+x=0$ and gets $x=-1$ only. Find every solution.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 21 Simultaneous equations • Equations from situations • Cubic reciprocal and other graphs

L061–L063 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A19, A21, A12, A14

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L061 Simultaneous equations Objective: Solve simultaneous equations and interpret the solution as a common point.	State the objective and timeline. Retrieve algebra pathway and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for simultaneous equations. Ask for a reason, not only an answer.	Eliminate or substitute and check both equations; Higher: linear–quadratic systems	Solve a pair and verify both conditions Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $3x+2y=16$ and $x-2y=0$. Deep challenge: Can $x+y=5$ and $2x+2y=12$ have a solution? Justify.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L062 Equations from situations Objective: Translate a situation into equations and interpret solutions in context.	State the objective and timeline. Retrieve simultaneous equations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for equations from situations. Ask for a reason, not only an answer.	Define variables with units; reject solutions that violate the situation	Form and solve a contextual model, stating assumptions Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Three adult tickets and two child tickets cost £37. Adults cost £9 each. Find child price. Deep challenge: A rectangle's length is twice its width and its area is 50 cm^2 . Find positive dimensions.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L063 Cubic reciprocal and other graphs Objective: Recognise graph families and estimate solutions graphically.	State the objective and timeline. Retrieve equations from situations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cubic reciprocal and other graphs. Ask for a reason, not only an answer.	Compare cubic and reciprocal graphs; Higher: exponential and trigonometric forms	Match equations to graphs and explain distinguishing features Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: For $y=12/x$, find points when $x=-3$ and $x=4$, and identify the missing x -value. Deep challenge: Compare $y=x^3$ and $y=-x^3$ at $x=-2$ and $x=2$. What symmetry relates them?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 22 Cumulative checkpoint 4 and feedback • Direct and inverse proportion • Speed density and pressure

L064–L066 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Cumulative, previously, taught, statements, N13, R1, R7, R10, R13, R14, R11, G14

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L064 Cumulative checkpoint 4 and feedback Objective: Apply number accuracy, graphs and equations in cumulative tasks.	State the objective and timeline. Retrieve cubic reciprocal and other graphs or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint 4 and feedback. Ask for a reason, not only an answer.	Diagnose whether errors arise in modelling, manipulation or checking	Repair the weakest prerequisite and retry a fresh problem Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $x^2+2x-15=0$ and $2a^3\times3a^2$. Deep challenge: A student obtains $x=2,y=3$ from $x+y=5$ and $x-y=1$. Test and repair.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L065 Direct and inverse proportion Objective: Solve direct and inverse proportion problems and represent relationships.	State the objective and timeline. Retrieve cumulative checkpoint 4 and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for direct and inverse proportion. Ask for a reason, not only an answer.	Use tables, graphs and equations; distinguish proportional from merely increasing relationships	Find a constant and test the model with another value Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: y is inversely proportional to x^2 . If $y=12$ at $x=2$, find y at $x=4$. Deep challenge: A graph through the origin appears curved upward. Can y be directly proportional to x ? Explain.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L066 Speed density and pressure Objective: Use speed, density and pressure with consistent units.	State the objective and timeline. Retrieve direct and inverse proportion or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for speed density and pressure. Ask for a reason, not only an answer.	Rearrange compound-measure relationships; estimate before calculator work	Solve mixed compound-measure questions and check dimensions Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A solid has density 7.8 g/cm^3 and volume 25 cm^3 . Find mass. Deep challenge: Pressure doubles while force is constant. What happened to contact area? Explain algebraically.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 23 Growth decay and compound interest • Rates pathway and repair • Similarity and lengths

L067–L069 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: R16, Cumulative, previously, taught, statements, R12, G19

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L067 Growth decay and compound interest Objective: Model repeated percentage change, growth, decay and compound interest.	State the objective and timeline. Retrieve speed density and pressure or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for growth decay and compound interest. Ask for a reason, not only an answer.	Compare additive and multiplicative change using successive periods	Calculate repeated change and explain the multiplier Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: £1,000 grows 4% annually for three years. Find final value to the nearest penny. Deep challenge: A price rises 20% then falls 20%. Prove it does not return to the starting price.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L068 Rates pathway and repair Objective: Select a proportion or rate method and explain assumptions.	State the objective and timeline. Retrieve growth decay and compound interest or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for rates pathway and repair. Ask for a reason, not only an answer.	Foundation: unit rates and percentages. Higher: non-linear proportion and iterative growth	Solve an unfamiliar rate problem and test plausibility Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A car uses 18 litres over 240 km. Express fuel use in litres per 100 km. Deep challenge: A distance is fixed. If speed increases by 25%, what happens to journey time?	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L069 Similarity and lengths Objective: Use similarity to calculate missing lengths and justify scale factors.	State the objective and timeline. Retrieve rates pathway and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for similarity and lengths. Ask for a reason, not only an answer.	Match corresponding vertices before calculating; contrast similarity with congruence	Find lengths in varied orientations and justify correspondence Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Similar triangles have corresponding sides 6 cm and 15 cm. A 9 cm side corresponds to what length? Deep challenge: Are triangles with side sets 3,4,5 and 6,8,11 similar? Explain.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 24 Area and volume scale factors • Triangle problems and bearings • Cumulative checkpoint 5 and feedback

L070–L072 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: R12, G19, G15, G22, G23, Cumulative, previously, taught, statements

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L070 Area and volume scale factors Objective: Connect linear scale factors with area and volume change at the appropriate tier.	State the objective and timeline. Retrieve similarity and lengths or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for area and volume scale factors. Ask for a reason, not only an answer.	Foundation: revisit length scale and direct area/volume calculation. Higher: squared and cubed scale factors	Compare similar shapes or solids using a tier-matched task Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Two similar solids have lengths ratio 3:4 and smaller surface area 54 cm ² . Find larger area. Deep challenge: Volume ratio of similar solids is 27:64. Find length and area ratios.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L071 Triangle problems and bearings Objective: Combine triangle methods, scale drawings and bearings appropriately.	State the objective and timeline. Retrieve area and volume scale factors or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for triangle problems and bearings. Ask for a reason, not only an answer.	Foundation: right triangles and bearings. Higher: sine rule, cosine rule and non-right-triangle area	Solve a diagram problem and check angle and length plausibility Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A traveller goes north 12 km and east 5 km. Find distance and bearing from start to nearest degree. Deep challenge: A bearing from A to B is 315°. State reverse bearing and explain the 180° change.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L072 Cumulative checkpoint 5 and feedback Objective: Choose and justify methods across earlier proportional and geometric work.	State the objective and timeline. Retrieve triangle problems and bearings or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint 5 and feedback. Ask for a reason, not only an answer.	Assess cumulative learning; separate prerequisite gaps from method-selection errors	Repair a method-selection error and attempt a fresh context Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A similar shape has length factor 1.5. Its original area is 80 cm ² . Find new area. Deep challenge: A learner uses a length factor of 3 to triple volume. Correct the claim.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 25 Probability trees and combined events • Dependent events and assumptions • Frequency trees and probability models

L073–L075 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: P6, P8, P1, P5

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L073 Probability trees and combined events Objective: Use probability trees and combine event probabilities.	State the objective and timeline. Retrieve cumulative checkpoint 5 and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for probability trees and combined events. Ask for a reason, not only an answer.	Label branches, check totals and identify whether to add or multiply	Calculate combined events and explain the path calculation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Two independent events have probabilities 0.4 and 0.7. Find P(both) and P(neither). Deep challenge: Toss a biased coin with P(H)=0.7 three times. Find P(exactly two heads).	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L074 Dependent events and assumptions Objective: Recognise dependence and the assumptions behind a probability model.	State the objective and timeline. Retrieve probability trees and combined events or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for dependent events and assumptions. Ask for a reason, not only an answer.	Foundation: simple experiments and frequency models. Higher: without-replacement trees and conditional probability	Explain how changing an assumption changes a probability Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A bag holds 5 red and 4 blue. Find P(two blue without replacement). Deep challenge: A bag has 4 red and 1 blue. Given the first draw was red, find P(second red without replacement).	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L075 Frequency trees and probability models Objective: Interpret frequency trees and compare model predictions with observed data.	State the objective and timeline. Retrieve dependent events and assumptions or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for frequency trees and probability models. Ask for a reason, not only an answer.	Move between counts and probabilities; distinguish experimental from theoretical probability	Complete a tree and assess the usefulness of a model Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Of 80 people, 45 cycle. Of those who cycle, 27 are adults. Find the conditional proportion of adults among cyclists. Deep challenge: A frequency tree has root 60 and first branches 28 and 31. Diagnose the issue and state a possible repair.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 26 Probability pathway and repair • Scatter graphs and correlation • Statistical graphs pathway

L076–L078 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: P9, S6, S2, S3

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L076 Probability pathway and repair Objective: Select a probability representation and repair common errors.	State the objective and timeline. Retrieve frequency trees and probability models or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for probability pathway and repair. Ask for a reason, not only an answer.	Foundation: sample spaces and frequency trees. Higher: conditional and dependent events	Compare two approaches to a tier-matched event problem Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Two fair dice are rolled. Find P(at least one six). Deep challenge: A bag with 3 red and 2 blue is drawn twice without replacement. Are the events independent? Show with probabilities.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L077 Scatter graphs and correlation Objective: Describe correlation, use a line of best fit and recognise limits of prediction.	State the objective and timeline. Retrieve probability pathway and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for scatter graphs and correlation. Ask for a reason, not only an answer.	Distinguish association from cause; contrast interpolation and extrapolation	Estimate from a scatter graph and state a limitation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A trend line predicts 45 at x=8 from data spanning x=2 to 10. Is this interpolation or extrapolation? Deep challenge: A scatter graph shows strong negative correlation between screen time and sleep. Can it prove screen time causes less sleep?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L078 Statistical graphs pathway Objective: Select and interpret statistical graphs appropriate to the tier.	State the objective and timeline. Retrieve scatter graphs and correlation or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for statistical graphs pathway. Ask for a reason, not only an answer.	Foundation: charts and grouped summaries. Higher: cumulative frequency and histograms with unequal intervals	Construct or interpret a graph, checking scale and frequency meaning Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A histogram class 10–14 has frequency 20 and width 4; class 14–24 has frequency 30 and width 10. Compare densities. Deep challenge: Why must a histogram use area rather than bar height for frequency when widths differ?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 27 Comparing distributions pathway • Cumulative checkpoint 6 and feedback • Circle geometry pathway

L079–L081 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: S4, S5, Cumulative, previously, taught, statements, G9, G10

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L079 Comparing distributions pathway Objective: Compare distributions using suitable statistics and graphical evidence.	State the objective and timeline. Retrieve statistical graphs pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for comparing distributions pathway. Ask for a reason, not only an answer.	Foundation: mean, median and range. Higher: quartiles, interquartile range and box plots	Write a contextual comparison supported by centre and spread Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Group A has Q1=7,Q3=19; group B has Q1=10,Q3=17. Compare IQRs. Deep challenge: Can one distribution have both a higher median and a larger IQR than another? Explain the practical interpretation.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L080 Cumulative checkpoint 6 and feedback Objective: Apply probability and statistics with earlier number and algebra.	State the objective and timeline. Retrieve comparing distributions pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint 6 and feedback. Ask for a reason, not only an answer.	Use a cumulative diagnostic followed by targeted repair and a fresh check	Correct one interpretation error and practise a linked prerequisite Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A class interval width 6 has frequency 27. Find density, then expected frequency for width 10 at the same density. Deep challenge: Explain why a single experimental probability estimate may change when more trials are added.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L081 Circle geometry pathway Objective: Use circle geometry at the appropriate tier and explain angle reasoning.	State the objective and timeline. Retrieve cumulative checkpoint 6 and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for circle geometry pathway. Ask for a reason, not only an answer.	Foundation: circle measures and general angle facts. Higher: circle theorems and proof chains	Justify a circle calculation with named reasons Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A central angle is 146°. Find the circumference angle subtending the same arc. Deep challenge: In a cyclic quadrilateral, opposite angles are 2x+10 and 3x–5. Find x and both angles.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 28 Vectors and translations • Vector reasoning pathway • Geometry connections and repair

L082–L084 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: G24, G25, G6

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L082 Vectors and translations Objective: Represent translations as column vectors and combine displacements.	State the objective and timeline. Retrieve circle geometry pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for vectors and translations. Ask for a reason, not only an answer.	Connect arrows and coordinates; distinguish a position from a displacement	Add and subtract vectors and check endpoints Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A triangle has vertices (0,0),(2,1), (1,4). Translate by (−3,2). State all new vertices. Deep challenge: A translation maps A=(−2,5) to A'=(4,−1). Show where B=(3,3) maps.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L083 Vector reasoning pathway Objective: Reason with vectors at the appropriate tier.	State the objective and timeline. Retrieve vectors and translations or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for vector reasoning pathway. Ask for a reason, not only an answer.	Foundation: translations and vector arithmetic. Higher: geometric vector arguments, parallelism and division of lines	Explain a vector result and test it with coordinates where appropriate Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: If a=(4,−1) and b=(−2,5), find 3a+2b. Deep challenge: Prove vector AB+BC=AC for A=(1,1),B=(4,3),C=(7,−2).	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L084 Geometry connections and repair Objective: Connect geometry methods and repair weaknesses revealed by evidence.	State the objective and timeline. Retrieve vector reasoning pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for geometry connections and repair. Ask for a reason, not only an answer.	Contrast a diagram's appearance with given facts; choose angle, length or vector methods	Solve a mixed geometry task and name the facts used Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A circle has centre O, tangent at T and chord through T. Explain the right angle between OT and tangent. Deep challenge: A translated quadrilateral keeps all side lengths. Explain why translation also preserves parallel sides.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 29 Functions pathway • Graph transformations pathway • Equation-solving pathway

L085–L087 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A7, A13, A20, A22

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L085 Functions pathway Objective: Interpret functions at the appropriate tier.	State the objective and timeline. Retrieve geometry connections and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for functions pathway. Ask for a reason, not only an answer.	Foundation: function machines and substitution. Higher: function notation, inverse and composite functions	Trace inputs and outputs; Higher learners check inverse composition Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: If $f(x)=x^2+2x$, find $f(-3)$ and solve $f(x)=0$. Deep challenge: Let $f(x)=2x+1$ and $g(x)=x^2$. Compare $f(g(3))$ and $g(f(3))$.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L086 Graph transformations pathway Objective: Interpret changes to graphs at the appropriate tier.	State the objective and timeline. Retrieve functions pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for graph transformations pathway. Ask for a reason, not only an answer.	Foundation: coordinates and straight-line changes. Higher: translations and reflections of function graphs	Match graphs to transformations and explain coordinate changes Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Describe transformations from $y=x^2$ to $y=(x+3)^2+2$ and state turning point. Deep challenge: A learner says $y=(x-4)^2$ moves left 4. Correct using a point on the original graph.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L087 Equation-solving pathway Objective: Select equation and inequality methods appropriate to the tier.	State the objective and timeline. Retrieve graph transformations pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for equation-solving pathway. Ask for a reason, not only an answer.	Foundation: linear equations and number-line inequalities. Higher: iteration, quadratic inequalities and regions	Check solutions against the original conditions; explain a boundary Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $3x^2-15x=0$ and check both solutions. Deep challenge: Solve $x+y=11$ and $2x-y=4$, then show both checks.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 30 Cumulative checkpoint 7 and feedback • Rates from graphs pathway • Circle equations pathway

L088–L090 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Cumulative, previously, taught, statements, A15, R15, A16, G11

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L088 Cumulative checkpoint 7 and feedback Objective: Apply algebra and geometry pathways in a cumulative assessment.	State the objective and timeline. Retrieve equation-solving pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for cumulative checkpoint 7 and feedback. Ask for a reason, not only an answer.	Use errors to select a prerequisite, model a repair and reassess independently	Complete a delayed matched question and update the error log Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A line $y=2x-3$ and a quadratic $y=x^2-4x+1$ intersect. Form the equation for their x-coordinates. Deep challenge: Why is substituting a found root back into the original equations stronger than repeating the same algebra?	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.
L089 Rates from graphs pathway Objective: Interpret rates and areas from graphs at the appropriate tier.	State the objective and timeline. Retrieve cumulative checkpoint 7 and feedback or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for rates from graphs pathway. Ask for a reason, not only an answer.	Foundation: straight-line rates and simple speed graphs. Higher: tangents and estimates of area under curves	Explain a rate estimate and check units and approximation Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A velocity increases uniformly from 4 to 16 m/s in 6 s. Find acceleration and distance. Deep challenge: A velocity-time graph dips below the time axis. What does negative area mean?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L090 Circle equations pathway Objective: Connect circle and coordinate geometry at the appropriate tier.	State the objective and timeline. Retrieve rates from graphs pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for circle equations pathway. Ask for a reason, not only an answer.	Foundation: coordinates and circle measures. Higher: circle equations and tangent reasoning	Check whether a point fits the relationship and justify a result Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A circle has equation $x^2+y^2=49$. Find y-values when $x=0$ and when $x=5$. Deep challenge: Can (7,7) lie on the circle $x^2+y^2=49$? Justify by substitution.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 31 Proof and algebraic structure • Mixed modelling and checking • Number and ratio consolidation

L091–L093 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: A4, A5, A6, Cumulative, previously, taught, statements, Full, tier, coverage;, assessment/revision

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L091 Proof and algebraic structure Objective: Explain algebraic structure and build a logical argument.	State the objective and timeline. Retrieve circle equations pathway or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for proof and algebraic structure. Ask for a reason, not only an answer.	Foundation: equivalence and numerical counterexamples. Higher: algebraic fractions, manipulation and proof	Critique an argument, then write a justified solution Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Prove the product of two consecutive integers is even. Deep challenge: Prove the sum of three consecutive integers is divisible by 3.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L092 Mixed modelling and checking Objective: Form a mathematical model, solve it and interpret its limitations.	State the objective and timeline. Retrieve proof and algebraic structure or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for mixed modelling and checking. Ask for a reason, not only an answer.	Compare models for a situation; identify assumptions and check reasonableness	Solve an unfamiliar mixed problem and explain the limitations Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A phone plan costs £12 plus 8p per text. Write a formula and find the cost for 125 texts. Deep challenge: A rectangle has perimeter 40 cm. Express area in terms of width x and find width for length 12 cm.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L093 Number and ratio consolidation Objective: Retrieve and connect number, ratio and proportional methods.	State the objective and timeline. Retrieve mixed modelling and checking or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for number and ratio consolidation. Ask for a reason, not only an answer.	Interleave methods without labels; use diagnostics to reteach the weakest link	Complete spaced practice selected from the error log Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Split £96 in ratio 1:3:4 and check the total. Deep challenge: A price increases 10% then 10%. Explain why total increase is 21%, not 20%.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 32 Algebra consolidation • Geometry probability and statistics consolidation • Coverage diagnostic and repair

L094–L096 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Full, tier, coverage,, assessment/revision

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L094 Algebra consolidation Objective: Retrieve and connect algebraic methods at the chosen tier.	State the objective and timeline. Retrieve number and ratio consolidation or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for algebra consolidation. Ask for a reason, not only an answer.	Compare equations, expressions and graphs; require a method-selection explanation	Solve a mixed algebra set and check each result Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $x^2-x-20=0$ and verify by expansion. Deep challenge: Find k so that $x^2+kx+12=(x+3)(x+4)$.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L095 Geometry probability and statistics consolidation Objective: Connect geometry, probability and statistics through mixed problems.	State the objective and timeline. Retrieve algebra consolidation or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for geometry probability and statistics consolidation. Ask for a reason, not only an answer.	Select representations and units; check whether conclusions follow from evidence	Practise weaker strands with one unfamiliar application Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A fair spinner has sectors 1,2,3,4. Find mean score over one spin and $P(\text{score} \geq 3)$. Deep challenge: A radius doubles. Compare the circle's area and circumference multipliers.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.
L096 Coverage diagnostic and repair Objective: Identify remaining coverage gaps and set a targeted repair plan.	State the objective and timeline. Retrieve geometry probability and statistics consolidation or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for coverage diagnostic and repair. Ask for a reason, not only an answer.	Use a balanced tier-specific diagnostic and teacher review of reasoning	Repair two priorities before the first mock cycle Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find area of a triangle with base 14 cm and height 9 cm, and $P(\text{red})$ from 7 red and 5 blue. Deep challenge: An error log shows repeated percentage and equation mistakes. Propose two different fresh checks and what they test.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. NC/C selected to purpose; label each question.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 33 Mock paper 1 non-calculator • Mock paper 2 calculator • Mock paper 3 calculator

L097–L099 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Full, tier, coverage,, assessment/revision

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L097 Mock paper 1 non-calculator Objective: Apply the chosen tier’s content independently in mock Paper 1.	Confirm the tier, paper conditions and 45 minute section. State the objective and connect to the prior coverage diagnostic.	Before timing begins, share one exam strategy and clarify how method marks are evidenced; do not discuss answers during the assessment.	Explain paper instructions, time allocation and permitted equipment. Distribute the selected 45 minute tier section; maintain exam conditions.	Complete the selected section independently under timed conditions. Save the full 90 minute rehearsal for a separately scheduled session.	Collect scripts. Learners note confidence and one time-management decision; mark and give method feedback at the next lesson.	For later feedback, not during timed work. Stretch: Without a calculator, find 7/12 of 84 and show a division-first method. Deep challenge: A learner gets 49 but writes only the answer on a two-mark question. Explain what evidence of method to add.	Mark the selected 45 minute section using the tier mark scheme; log topic and method errors. Schedule the complete 90 minute paper separately if needed. Non-calculator.
L098 Mock paper 2 calculator Objective: Apply the chosen tier’s content independently in mock Paper 2.	Confirm the tier, paper conditions and 45 minute section. State the objective and connect to the prior coverage diagnostic.	Before timing begins, share one exam strategy and clarify how method marks are evidenced; do not discuss answers during the assessment.	Explain paper instructions, time allocation and permitted equipment. Distribute the selected 45 minute tier section; maintain exam conditions.	Complete the selected section independently under timed conditions. Save the full 90 minute rehearsal for a separately scheduled session.	Collect scripts. Learners note confidence and one time-management decision; mark and give method feedback at the next lesson.	For later feedback, not during timed work. Stretch: Using a calculator, find 13.5% of £780 and round currency correctly. Deep challenge: A display shows 6.999999 after a calculation expected to be whole. What should the learner check before rounding?	Mark the selected 45 minute section using the tier mark scheme; log topic and method errors. Schedule the complete 90 minute paper separately if needed. Calculator permitted.
L099 Mock paper 3 calculator Objective: Apply the chosen tier’s content independently in mock Paper 3.	Confirm the tier, paper conditions and 45 minute section. State the objective and connect to the prior coverage diagnostic.	Before timing begins, share one exam strategy and clarify how method marks are evidenced; do not discuss answers during the assessment.	Explain paper instructions, time allocation and permitted equipment. Distribute the selected 45 minute tier section; maintain exam conditions.	Complete the selected section independently under timed conditions. Save the full 90 minute rehearsal for a separately scheduled session.	Collect scripts. Learners note confidence and one time-management decision; mark and give method feedback at the next lesson.	For later feedback, not during timed work. Stretch: A cylinder of radius 2.5 cm and height 12 cm has what volume to 1 d.p.? Deep challenge: A learner rounds π to 3 before multiplying in a multistep question. Explain the risk and repair.	Mark the selected 45 minute section using the tier mark scheme; log topic and method errors. Schedule the complete 90 minute paper separately if needed. Calculator permitted.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 34 Paper 1 feedback and repair • Paper 2 feedback and repair • Paper 3 feedback and repair

L100–L102 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Full, tier, coverage,, assessment/revision

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L100 Paper 1 feedback and repair Objective: Interpret feedback on mock Paper 1 and repair a priority misconception.	State the objective and timeline. Retrieve mock paper 3 calculator or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for paper 1 feedback and repair. Ask for a reason, not only an answer.	Use a 30 minute feedback conference with a worked-example/problem pair. Agree the next independent check	Correct selected errors, explain the decision that failed and schedule delayed retrieval Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Rework 5/6–1/4 without a calculator and simplify. Deep challenge: A learner adds denominators in 2/3+1/4 to get 3/7. Explain and correct.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Calculator and non-calculator as appropriate to repair.
L101 Paper 2 feedback and repair Objective: Interpret feedback on mock Paper 2 and repair a priority misconception.	State the objective and timeline. Retrieve paper 1 feedback and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for paper 2 feedback and repair. Ask for a reason, not only an answer.	Use a 30 minute feedback conference with a worked-example/problem pair. Agree the next independent check	Correct selected errors, explain the decision that failed and schedule delayed retrieval Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: £420 grows 7% for two years. Find value to nearest penny. Deep challenge: A calculator input 420×1+0.07 ² is used for growth. Identify the bracket error.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Calculator and non-calculator as appropriate to repair.
L102 Paper 3 feedback and repair Objective: Interpret feedback on mock Paper 3 and repair a priority misconception.	State the objective and timeline. Retrieve paper 2 feedback and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for paper 3 feedback and repair. Ask for a reason, not only an answer.	Use a 30 minute feedback conference with a worked-example/problem pair. Agree the next independent check	Correct selected errors, explain the decision that failed and schedule delayed retrieval Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A solid enlarges by length factor 2.5. Find surface area and volume factors. Deep challenge: A learner uses the area factor for volume. Explain why this fails with dimensions.	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Calculator and non-calculator as appropriate to repair.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 35 Delayed reassessment • Non-calculator number and algebra • Calculator fluency and accuracy

L103–L105 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: Full, tier, coverage;, assessment/revision

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L103 Delayed reassessment Objective: Demonstrate retained improvement through delayed reassessment.	State the objective and timeline. Retrieve paper 3 feedback and repair or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for delayed reassessment. Ask for a reason, not only an answer.	Use assessment evidence to select a worked-example/problem pair. Fade prompts and review a fresh independent response with the learner	Update the error log; schedule a fresh delayed question and explain how to check the answer Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Solve $x^2-8x+15=0$ after a one-week delay and check roots. Deep challenge: Why does copying a corrected example immediately after feedback give weaker retention evidence than a delayed fresh problem?	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Calculator and non-calculator as appropriate to repair.
L104 Non-calculator number and algebra Objective: Apply number and algebra methods without a calculator.	State the objective and timeline. Retrieve delayed reassessment or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for non-calculator number and algebra. Ask for a reason, not only an answer.	Use assessment evidence to select a worked-example/problem pair. Fade prompts and review a fresh independent response with the learner	Update the error log; schedule a fresh delayed question and explain how to check the answer Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Calculate $5/8-1/6$ exactly and simplify. Deep challenge: Solve $2(3x-1)=4x+10$ without a calculator and check.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Calculator and non-calculator as appropriate to repair.
L105 Calculator fluency and accuracy Objective: Use a calculator efficiently while checking magnitude, accuracy and units.	State the objective and timeline. Retrieve non-calculator number and algebra or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for calculator fluency and accuracy. Ask for a reason, not only an answer.	Use assessment evidence to select a worked-example/problem pair. Fade prompts and review a fresh independent response with the learner	Update the error log; schedule a fresh delayed question and explain how to check the answer Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Find the value of 250×1.035^4 to the nearest penny. Deep challenge: A result is 0.00048372. Round to three significant figures and explain the first significant digit.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Calculator and non-calculator as appropriate to repair.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.

Week 36 Reasoning and multi-step problems • Paper readiness • Personal revision plan and flexible repair

L106–L108 | 3 × 60 minutes | Resource folders by lesson ID | Sequence references: N14, Full, tier, coverage;, assessment/revision

Lesson and objective	Connect & Check	Share	Present	Apply	Recall & Review	Stretch and challenge	Assessment and response
L106 Reasoning and multi-step problems Objective: Explain a multi-step solution and justify method choices.	State the objective and timeline. Retrieve calculator fluency and accuracy or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for reasoning and multi-step problems. Ask for a reason, not only an answer.	Use assessment evidence to select a worked-example/problem pair. Fade prompts and review a fresh independent response with the learner	Update the error log; schedule a fresh delayed question and explain how to check the answer Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A £120 item is discounted 15% then its new price increases 10%. Find final price. Deep challenge: Explain why the order of two percentage multipliers does not affect the final number, but the story still matters.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Calculator and non-calculator as appropriate to repair.
L107 Paper readiness Objective: Demonstrate paper readiness through mixed tier-appropriate questions.	State the objective and timeline. Retrieve reasoning and multi-step problems or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for paper readiness. Ask for a reason, not only an answer.	Use assessment evidence to select a worked-example/problem pair. Fade prompts and review a fresh independent response with the learner	Update the error log; schedule a fresh delayed question and explain how to check the answer Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: A learner spends 18 minutes on a 6-mark question. At 90 minutes for 80 marks, how many minutes above proportional allocation is that? Deep challenge: Give a practical paper strategy after finding an unfamiliar question.	Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Calculator and non-calculator as appropriate to repair.
L108 Personal revision plan and flexible repair Objective: Plan spaced revision and choose manageable next steps from evidence.	State the objective and timeline. Retrieve paper readiness or a prerequisite. Diagnose a common error before modelling.	Pairs compare methods or predict a result for personal revision plan and flexible repair. Ask for a reason, not only an answer.	Use assessment evidence to select a worked-example/problem pair. Fade prompts and review a fresh independent response with the learner	Update the error log; schedule a fresh delayed question and explain how to check the answer Use guided support, then remove it for independent working.	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Stretch: Plan three short spaced checks for fractions over two weeks, with one fresh question in each. Deep challenge: A learner can answer only when following a model. What evidence would justify removing the scaffold?	Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Calculator and non-calculator as appropriate to repair.

Weekly decision Review the three exit checks and mini-tests. Revisit shared errors in the next Connect & Check; retain a fresh independent response as evidence of improvement.