

GCSE ONLINE TUTORING

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MASTER SPECIFICATION REFERENCE

A detailed Foundation + Higher curriculum map, audit checklist and revision-planning handbook

Cambridge OCR GCSE (9-1) Mathematics J560 | Foundation and Higher | Website reference edition | 2026

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Evidence standard

Official curriculum statements, exam arrangements, formula-sheet policy and grade/result figures are sourced to Cambridge OCR publications. Worked examples, explanations, diagnostic prompts and revision advice are independently authored. Historical grade boundaries describe completed series only and must not be treated as predictions.

How OCR J560 is assessed

Tier	Papers	Calculator pattern	Marks	Award range
Foundation	J560/01, /02, /03	Calculator / Non-calculator / Calculator	$3 \times 100 = 300$	Grades 1-5
Higher	J560/04, /05, /06	Calculator / Non-calculator / Calculator	$3 \times 100 = 300$	Grades 4-9 (grade 3 safety-net outcome may be awarded)

Each paper is 1 hour 30 minutes and contributes one third of the qualification. Content can be assessed on any paper. [OCR-GLANCE]

How to use this reference

Treat each numbered OCR topic as a revision unit. For every unit, first secure the core method, then complete mixed questions, then record evidence of success. “Higher extension” does not mean that all other skills are Foundation-only: OCR statements often have initial-learning, Foundation and Higher columns. This handbook summarises the progression rather than reproducing the specification verbatim.

OCR 1 | Number operations and integers

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

1.01 Calculations with integers

What must be secure

- Use positive and negative integers fluently with the four operations.
- Apply non-calculator written methods and calculator methods appropriately.
- Interpret negative values in context, including temperature, money and change.
- Check sign and magnitude using inverse operations and estimation.

Student audit

☐ I can recognise this topic when it is disguised in a multi-step problem. ☐ I can choose a method without being prompted. ☐ I can show enough working to protect method marks. ☐ I can check whether my answer is sensible.

Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

1.02 Whole number theory

What must be secure

- Use odd/even, prime, factor, multiple, square, cube and root terminology accurately.
- Express integers as products of prime factors and use prime factorisation to find HCF/LCM.
- Recognise structure rather than relying on trial lists for larger values.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

1.03 Combining arithmetic operations**What must be secure**

- Apply the conventional order of operations, including brackets, powers and roots.
- Use brackets deliberately when entering multi-step expressions into a calculator.
- Distinguish exact intermediate values from rounded display values.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

1.04 Inverse operations**What must be secure**

- Use inverse operations to check arithmetic and solve missing-number problems.
- Understand relationships between powers and roots and between multiplication and division.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
1.01	Calculations with integers			
1.02	Whole number theory			
1.03	Combining arithmetic operations			
1.04	Inverse operations			

OCR 2 | Fractions, decimals and percentages

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

2.01 Fractions

What must be secure

- Recognise equivalent fractions and convert between mixed and improper forms.
- Add, subtract, multiply and divide fractions; maintain exact values where useful.
- Find fractions of quantities and express one quantity as a fraction of another.
- Higher work extends into algebraic fractions through the algebra section.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

2.02 Decimal fractions

What must be secure

- Use place value and calculate accurately with decimals.
- Round to stated decimal places or significant figures only at the required stage.
- Use decimal representation sensibly in money, measure and calculator work.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

2.03 Percentages

What must be secure

- Convert between fractions, decimals and percentages.
- Find a percentage of an amount and express one quantity as a percentage of another.
- Use multipliers for percentage increase/decrease and reverse-percentage problems.
- Distinguish percentage change from percentage-point change.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

2.04 Ordering fractions, decimals and percentages

What must be secure

- Compare mixed numerical forms by converting to a common representation.
- Place values accurately on number lines and use inequality notation where appropriate.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
2.01	Fractions			
2.02	Decimal fractions			
2.03	Percentages			
2.04	Ordering fractions, decimals and percentages			

OCR 3 | Indices and surds

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

3.01 Powers and roots

What must be secure

- Use integer powers and roots and apply index laws.
- Interpret zero and negative indices; Higher includes more demanding algebraic index manipulation.
- Recognise exact roots versus decimal approximations.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

3.02 Standard form

What must be secure

- Convert between ordinary numbers and standard form.
- Calculate with numbers in standard form using correct powers of ten.
- Use calculator standard-form entry correctly and interpret display notation.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

3.03 Exact calculations

What must be secure

- Work exactly with multiples of π and roots when the question requires exact form.
- Higher tier includes simplifying surds and rationalising denominators where specified.
- Do not replace exact values with premature decimals.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
3.01	Powers and roots			
3.02	Standard form			
3.03	Exact calculations			

OCR 4 | Approximation and estimation

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

4.01 Approximation and estimation

What must be secure

- Round to decimal places and significant figures; estimate calculations using appropriate approximations.
- Use error intervals and bounds where required.
- Higher tier: calculate upper/lower bounds in compound calculations; from November 2026 OCR uses explicit “upper bound/lower bound” wording where appropriate.
- Carry sufficient precision through intermediate steps.

Student audit

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2026 specification note: from November 2026, OCR says Higher questions assessing statement 4.01c will, where appropriate, ask explicitly for the “upper bound” or “lower bound”. [OCR-UPDATE-BOUNDS]

Section review record

Topic	First check	Repair priority	Retest	Secure?
4.01	Approximation and estimation			

OCR 5 | Ratio, proportion and rates of change

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

5.01 Calculations with ratio

What must be secure

- Simplify ratios, divide quantities in a given ratio and convert between ratio/fraction representations.
- Work consistently with units before forming ratios.
- Use scale factors and compare multiplicative relationships.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

5.02 Direct and inverse proportion

What must be secure

- Recognise and use direct/inverse proportionality in numerical, algebraic and graphical forms.

- Build and use equations of proportionality; Higher includes more sophisticated powers/relationships.
- Distinguish proportional graphs from merely increasing graphs.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

5.03 Discrete growth and decay

What must be secure

- Use percentage multipliers for repeated growth/decay and compound interest.
- Interpret repeated percentage change and compare simple versus compound change.
- Use the compound-interest relationship correctly with rate as a percentage.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
5.01	Calculations with ratio			
5.02	Direct and inverse proportion			
5.03	Discrete growth and decay			

OCR 6 | Algebra

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

6.01 Algebraic expressions

What must be secure

- Use algebraic notation, collect like terms, expand and factorise expressions.
- Manipulate products, powers and algebraic fractions at the appropriate tier.
- Higher work includes more demanding quadratic/algebraic manipulation.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

6.02 Algebraic formulae

What must be secure

- Substitute into formulae with correct order of operations and units.
- Rearrange formulae to change the subject; Higher includes cases where the subject appears more than once or as a power/reciprocal.
- Recall/use standard formulae in line with OCR 6.02d and current formula-sheet policy.
- For 6.02e kinematics, OCR clarified from summer 2026 that definitions of s , u , v , a and t need not be memorised.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

2026 teaching note: OCR clarified that from summer 2026 students are not required to memorise what the letters s , u , v , a and t stand for in kinematic equations. [OCR-UPDATE-KIN]

6.03 Algebraic equations

What must be secure

- Solve linear equations and equations arising from problems.
- Solve simultaneous equations and quadratics at the appropriate tier.
- Form equations from context before solving; verify solutions against the original problem.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

6.04 Algebraic inequalities

What must be secure

- Solve inequalities and represent solutions on number lines.
- Higher includes more complex inequalities and combined reasoning.
- Preserve/reverse inequality signs correctly when multiplying or dividing by a negative.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

6.05 Language of functions

What must be secure

- Use function notation and understand input-output relationships.
- Higher tier includes composite and inverse-function reasoning where specified.
- Distinguish $f(x)$ notation from multiplication.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

6.06 Sequences

What must be secure

- Generate terms from rules and identify patterns.
- Use term-to-term and position-to-term rules, including arithmetic sequences.
- Higher includes more complex sequence forms and algebraic reasoning.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
6.01	Algebraic expressions			

6.02	Algebraic formulae			
6.03	Algebraic equations			
6.04	Algebraic inequalities			
6.05	Language of functions			
6.06	Sequences			

OCR 7 | Graphs of equations and functions

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

7.01 Graphs of equations and functions

What must be secure

- Plot and interpret graphs from equations and tables.
- Relate roots/intersections to solutions of equations.
- Higher includes more demanding nonlinear graphs and algebra-graph links.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

7.02 Straight line graphs

What must be secure

- Use $y=mx+c$, interpret gradient/intercept and find equations of lines.
- Use parallel/perpendicular line relationships at the appropriate tier.
- Calculate gradient from coordinates accurately.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

7.03 Transformations of curves and their equations

What must be secure

- Higher-focused: recognise effects of translations/reflections/scalings on familiar graphs where required.

- Link algebraic changes in an equation to geometric changes in its graph.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

7.04 Interpreting graphs

What must be secure

- Interpret distance-time, velocity-time and other real-world graphs.
- Use gradients and areas where specified; maintain units.
- Read scales carefully and distinguish average from instantaneous rates.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
7.01	Graphs of equations and functions			
7.02	Straight line graphs			
7.03	Transformations of curves and their equations			
7.04	Interpreting graphs			

OCR 8 | Basic geometry

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

8.01 Conventions, notation and terms

What must be secure

- Use geometric vocabulary, notation and diagram conventions correctly.
- Distinguish assumptions from information actually marked/given in a diagram.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

8.02 Ruler and compass constructions

What must be secure

- Construct perpendiculars, bisectors and loci using appropriate instruments.
- Show construction arcs where evidence of method is required.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

8.03 Angles

What must be secure

- Use angle facts on lines, at points, in parallel lines and in polygons.
- Give reasons using correct terminology where reasoning is required.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

8.04 Properties of polygons

What must be secure

- Use properties of triangles and quadrilaterals and calculate polygon angle sums.
- Apply symmetry and classification accurately rather than relying on appearance.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

8.05 Circles

What must be secure

- Use circle terminology and standard circle facts.
- Higher includes circle theorems and multi-step angle reasoning.
- State reasons rather than presenting unexplained angle values in proof/reasoning tasks.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

8.06 Three-dimensional shapes

What must be secure

- Identify and interpret faces, edges, vertices, nets, plans and elevations.
- Visualise 3D geometry from 2D representations.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
8.01	Conventions, notation and terms			
8.02	Ruler and compass constructions			
8.03	Angles			
8.04	Properties of polygons			
8.05	Circles			
8.06	Three-dimensional shapes			

OCR 9 | Congruence and similarity

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

9.01 Plane isometric transformations

What must be secure

- Describe and perform reflections, rotations and translations precisely.
- State centre/angle/direction or vector as required.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

9.02 Congruence

What must be secure

- Use congruence criteria and justify congruent triangles where required.
- Separate “same shape” similarity from “same size and shape” congruence.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

9.03 Plane vector geometry

What must be secure

- Use column vectors and vector arithmetic at the appropriate tier.
- Higher includes proof-style vector reasoning and expressing vectors in terms of others.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

9.04 Similarity

What must be secure

- Use scale factors for length, area and volume.
- Higher includes algebraic similarity and proof/reasoning.
- Square/cube the linear scale factor for area/volume respectively.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
9.01	Plane isometric transformations			
9.02	Congruence			
9.03	Plane vector geometry			
9.04	Similarity			

OCR 10 | Mensuration

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

10.01 Units and measurement

What must be secure

- Convert between metric units and compound units.
- Use appropriate units and dimensions in final answers.
- Interpret accuracy of measurements where relevant.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

10.02 Perimeter calculations

What must be secure

- Calculate perimeters of polygons and compound shapes.
- Use arc length/circle circumference relationships at the appropriate tier.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

10.03 Area calculations

What must be secure

- Calculate areas of standard and compound shapes, including trapezia and circles.
- Decompose complex regions efficiently and preserve exact pi when appropriate.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

10.04 Volume and surface area calculations

What must be secure

- Calculate volume/surface area of prisms and other solids at the appropriate tier.
- Formulae for cones/spheres may be supplied in questions under OCR policy; select and substitute correctly.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

10.05 Triangle mensuration

What must be secure

- Use Pythagoras and right-angled trigonometry.
- Higher: use sine rule, cosine rule and $\text{area} = \frac{1}{2} ab \sin C$.
- Select the simplest valid method from the information given.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
10.01	Units and measurement			
10.02	Perimeter calculations			
10.03	Area calculations			
10.04	Volume and surface area calculations			
10.05	Triangle mensuration			

OCR 11 | Probability

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

11.01 Basic probability and experiments

What must be secure

- Use the 0-to-1 probability scale, complementary probability and experimental relative frequency.
- Estimate expected frequencies and interpret long-run behaviour.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

11.02 Combined events and probability diagrams

What must be secure

- Use sample spaces, tree diagrams and combined-event reasoning.
- Apply addition law; Higher includes conditional/multiplication law as specified.
- Decide whether events are mutually exclusive or independent before using shortcuts.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
11.01	Basic probability and experiments			
11.02	Combined events and probability diagrams			

OCR 12 | Statistics

Official source: OCR J560 specification and OCR topic-resource structure. [OCR-SPEC]

12.01 Sampling

What must be secure

- Understand populations, samples, bias and sampling methods.
- Evaluate whether a sample can support the intended conclusion.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

12.02 Interpreting and representing data

What must be secure

- Read/create tables, charts, histograms and cumulative-frequency representations at the appropriate tier.
- Use correct frequency density where required and accurate scales.

Student audit

☐ I can recognise this topic when it is disguised in a multi-step problem. ☐ I can choose a method without being prompted. ☐ I can show enough working to protect method marks. ☐ I can check whether my answer is sensible.

Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

12.03 Analysing data

What must be secure

- Calculate and compare measures of central tendency and spread.

- Interpret scatter diagrams/correlation and avoid claiming causation from correlation alone.
- Higher includes quartile/IQR and other specified comparative analysis.

Student audit

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Evidence standard Complete at least one routine question and one unfamiliar/context question without notes; then explain the method aloud or in writing.

Section review record

Topic	First check	Repair priority	Retest	Secure?
12.01	Sampling			
12.02	Interpreting and representing data			
12.03	Analysing data			

References and source register

[OCR-SPEC] Cambridge OCR, GCSE (9-1) Mathematics J560 Specification, current specification (version 2.1 update announced 17 September 2026). <https://www.ocr.org.uk/Images/168982-specification-gcse-mathematics.pdf>

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[OCR-UPDATE-BOUNDS] Cambridge OCR, Updated specification and resources for GCSE Mathematics J560, 17 September 2026. <https://www.ocr.org.uk/administration/support-and-tools/subject-updates/gcse-maths-bounds-763330/>

[OCR-UPDATE-KIN] Cambridge OCR, Amended specification for GCSE Mathematics, 29 August 2025 (6.02e kinematics notation clarification). <https://www.ocr.org.uk/administration/support-and-tools/subject-updates/gcse-maths-clarification-742180/>

[OCR-FORM27] Cambridge OCR, Formulae and equation sheets for assessments in 2027.
<https://www.ocr.org.uk/administration/support-and-tools/subject-updates/formulae-equation-sheets-763224/>

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