FREE REVISION CHECKLIST

AQA GCSE Maths Revision Checklist

AQA GCSE Mathematics (8300) · Foundation and Higher Tier

NUMBER · ALGEBRA · RATIO · GEOMETRY · PROBABILITY · STATISTICS

EXAM BOARD	AQA GCSE Mathematics
COURSE CODE	8300
TIERS	Foundation (grades 1–5) and Higher (grades 4–9)
PAPERS	Paper 1 Non-Calculator · Paper 2 Calculator · Paper 3 Calculator
TOPICS	115 topics in six units (79 for every student, 36 Higher only)
FORMULAE	A formulae sheet is provided in every paper

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YOUR EXAM

THE EXAM AT A GLANCE

Everything in this checklist is in the AQA GCSE Mathematics (8300) specification (the official list of topics). Each tier has three papers, all sat at the end of Year 11.

PAPER 1	PAPER 2	PAPER 3
Non-Calculator	**Calculator**	**Calculator**
1h 30m · 80 marks	1h 30m · 80 marks	1h 30m · 80 marks

Each paper is worth one third of the final grade. A formulae sheet is provided in every paper.

Foundation Tier

Grades 1 to 5 are available. Students on this tier study the topics marked **All**.

Higher Tier

Grades 4 to 9 are available, with a grade 3 allowed if a student only just misses grade 4. Students study every topic.

THE SIX UNITS

Number
20 topics · 5 Higher only

Algebra
37 topics · 17 Higher only

Ratio, Proportion and Rates of Change
13 topics · 2 Higher only

Geometry and Measures
29 topics · 9 Higher only

Probability
7 topics · 1 Higher only

Statistics
9 topics · 2 Higher only

HOW TO USE THIS CHECKLIST

1. **Tick One Box**
   For each topic, tick Not Yet, Nearly or Confident. Be honest!
2. **Start With Not Yet**
   Revise the Not Yet topics first, then move on to the Nearly ones.
3. **Use the Grades**
   Lower-grade topics come first in each unit. Secure them before harder ones.
4. **Repeat Monthly**
   Fill it in again every month and watch the Confident column grow.

☐ Not Yet ☐ Nearly ☐ Confident **All** Foundation and Higher **Higher** Higher only

Grade colours: Grades 1–3 · Grades 4–5 · Grades 6–7 · Grades 8–9

The number next to each topic is the grade it usually appears at in the exam. It is a guide, not an official exam board grading.

Number

20 topics · 5 Higher only

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
1	**Place Value and Ordering** Ordering integers, decimals and negative numbers; using <, >, ≤ and ≥	All	1	☐	☐	☐
2	**The Four Operations** Written methods for adding, subtracting, multiplying and dividing, including negatives and decimals	All	1	☐	☐	☐
3	**Factors, Multiples and Primes** Finding factors, multiples and prime numbers	All	1	☐	☐	☐
4	**Order of Operations** Using BIDMAS correctly, including with powers and brackets	All	2	☐	☐	☐
5	**Squares, Cubes and Roots** Square numbers, cube numbers, square roots and cube roots	All	2	☐	☐	☐
6	**Fractions: Equivalence and Ordering** Simplifying, comparing and ordering fractions	All	2	☐	☐	☐
7	**Fractions, Decimals and Percentages** Converting between the three and putting them in order	All	2	☐	☐	☐
8	**Rounding** Rounding to the nearest whole number, decimal places and significant figures	All	2	☐	☐	☐
9	**Calculating With Fractions** Adding, subtracting, multiplying and dividing fractions and mixed numbers	All	3	☐	☐	☐
10	**Prime Factors, HCF and LCM** Writing a number as a product of primes; using it to find the HCF and LCM	All	3	☐	☐	☐
11	**Estimation** Estimating answers by rounding to 1 significant figure	All	3	☐	☐	☐
12	**Laws of Indices** Multiplying and dividing powers, powers of powers, zero and negative indices	All	4	☐	☐	☐
13	**Standard Form** Writing and calculating with very large and very small numbers	All	4	☐	☐	☐
14	**Error Intervals** Error intervals for rounding and truncation, using inequalities	All	4	☐	☐	☐
15	**Systematic Listing and the Product Rule** Listing outcomes and counting combinations with the product rule	All	5	☐	☐	☐
16	**Fractional Indices** Evaluating powers such as $27^{2/3}$ and $16^{-1/2}$	Higher	7	☐	☐	☐
17	**Recurring Decimals to Fractions** Converting a recurring decimal into an exact fraction	Higher	7	☐	☐	☐
18	**Upper and Lower Bounds** Using bounds in calculations to find the maximum and minimum answer	Higher	7	☐	☐	☐

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
19	**Simplifying Surds** Simplifying surds and expanding brackets that contain surds	Higher	7	☐	☐	☐
20	**Rationalising the Denominator** Removing a surd from the denominator of a fraction	Higher	8	☐	☐	☐

Algebra

37 topics · 17 Higher only

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
21	**Coordinates and Midpoints** Plotting points in all four quadrants and finding the midpoint of a line	All	2	☐	☐	☐
22	**Algebraic Notation and Simplifying** Writing expressions and collecting like terms	All	2	☐	☐	☐
23	**Substitution** Substituting numbers into expressions and formulae	All	2	☐	☐	☐
24	**Expressions, Equations, Formulae and Identities** Knowing the difference between each one, including the ≡ sign	All	3	☐	☐	☐
25	**Expanding and Factorising Single Brackets** Multiplying out a bracket and taking out a common factor	All	3	☐	☐	☐
26	**Linear Sequences and the nth Term** Term-to-term rules and finding the nth term of a linear sequence	All	3	☐	☐	☐
27	**Real-Life and Distance-Time Graphs** Reading and interpreting graphs of real situations	All	3	☐	☐	☐
28	**Solving Linear Equations** Including brackets, fractions and unknowns on both sides	All	4	☐	☐	☐
29	**Forming and Solving Equations** Writing an equation from a worded problem or diagram and solving it	All	4	☐	☐	☐
30	**Expanding Double Brackets** Multiplying out two brackets, such as (x + 3)(x − 5)	All	4	☐	☐	☐
31	**Rearranging Formulae** Changing the subject of a formula	All	4	☐	☐	☐
32	**Linear Inequalities** Solving inequalities and showing the answer on a number line	All	4	☐	☐	☐
33	**Straight-Line Graphs** Plotting y = mx + c and finding the gradient and y-intercept	All	4	☐	☐	☐
34	**Other Sequences** Recognising Fibonacci-type, quadratic and simple geometric sequences	All	4	☐	☐	☐
35	**Equations of Straight Lines** Finding the equation of a line through two points; parallel lines	All	5	☐	☐	☐

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
36	**Factorising Quadratics** Factorising $x^2 + bx + c$, including the difference of two squares	All	5	☐	☐	☐
37	**Solving Quadratics by Factorising** Solving quadratic equations equal to zero	All	5	☐	☐	☐
38	**Quadratic Graphs** Plotting quadratic graphs and finding roots and turning points	All	5	☐	☐	☐
39	**Cubic and Reciprocal Graphs** Recognising and sketching cubic and reciprocal graphs	All	5	☐	☐	☐
40	**Simultaneous Linear Equations** Solving algebraically and graphically	All	5	☐	☐	☐
41	**Expanding Triple Brackets** Multiplying out three brackets to get a cubic expression	Higher	6	☐	☐	☐
42	**The Quadratic Formula** Solving quadratics that do not factorise	Higher	6	☐	☐	☐
43	**Factorising Harder Quadratics** Factorising $ax^2 + bx + c$ where a is not 1	Higher	7	☐	☐	☐
44	**Completing the Square** Writing a quadratic in completed square form and finding the turning point	Higher	7	☐	☐	☐
45	**Perpendicular Lines** Using gradients to find the equation of a perpendicular line	Higher	7	☐	☐	☐
46	**Rearranging Harder Formulae** Changing the subject when it appears more than once	Higher	7	☐	☐	☐
47	**nth Term of Quadratic Sequences** Finding the nth term of a quadratic sequence	Higher	7	☐	☐	☐
48	**Simultaneous Equations With a Quadratic** Solving a linear and a quadratic equation together	Higher	7	☐	☐	☐
49	**Exponential and Trigonometric Graphs** Recognising and sketching $y = k^x$, $y = \sin x$, $y = \cos x$ and $y = \tan x$	Higher	7	☐	☐	☐
50	**Functions** Function notation, composite functions and inverse functions	Higher	7	☐	☐	☐
51	**Iteration** Using iteration to find approximate solutions to equations	Higher	7	☐	☐	☐
52	**Algebraic Proof** Proving statements using algebra, including "show that" questions	Higher	7	☐	☐	☐
53	**Quadratic Inequalities** Solving quadratic inequalities and showing the solution set	Higher	8	☐	☐	☐
54	**Algebraic Fractions** Simplifying, adding, subtracting and solving with algebraic fractions	Higher	8	☐	☐	☐
55	**Graph Transformations** Translations and reflections of $y = f(x)$	Higher	8	☐	☐	☐

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
56	**Equation of a Circle and Tangents** Using $x^2 + y^2 = r^2$ and finding the equation of a tangent	Higher	8	☐	☐	☐
57	**Gradients and Areas Under Graphs** Estimating gradients of curves and areas under graphs, and interpreting them	Higher	8	☐	☐	☐

Ratio, Proportion and Rates of Change

13 topics · 2 Higher only

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
58	**Ratio Basics** Writing and simplifying ratios and sharing an amount in a ratio	All	3	☐	☐	☐
59	**Percentages of Amounts** Finding percentages and increasing or decreasing by a percentage	All	3	☐	☐	☐
60	**Direct Proportion and Best Buys** Recipes, unit pricing and value for money	All	3	☐	☐	☐
61	**Scale Drawings and Maps** Using scales and scale factors to find real lengths	All	3	☐	☐	☐
62	**Ratio Problems** Linking ratios to fractions and solving harder ratio problems	All	4	☐	☐	☐
63	**Simple Interest** Calculating simple interest over several years	All	4	☐	☐	☐
64	**Unit Conversions** Converting units of length, mass, time, money, area and volume	All	4	☐	☐	☐
65	**Percentage Change and Reverse Percentages** Finding a percentage change and the original amount	All	5	☐	☐	☐
66	**Compound Interest, Growth and Decay** Repeated percentage change, including depreciation	All	5	☐	☐	☐
67	**Compound Measures** Speed, density and pressure	All	5	☐	☐	☐
68	**Direct and Inverse Proportion** Recognising proportion from tables, graphs and context	All	5	☐	☐	☐
69	**Proportion With Equations** Forming equations such as $y = kx^2$ and $y = k \div x$	Higher	7	☐	☐	☐
70	**Rates of Change** Interpreting gradient as a rate of change; average and instantaneous rates	Higher	8	☐	☐	☐

Geometry and Measures

29 topics · 9 Higher only

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
71	**Angle Facts** Angles at a point, on a straight line, in triangles and vertically opposite	All	2	☐	☐	☐
72	**Properties of 2D Shapes** Properties of triangles and quadrilaterals; line and rotational symmetry	All	2	☐	☐	☐
73	**Perimeter and Area** Rectangles, triangles, parallelograms, trapezia and compound shapes	All	3	☐	☐	☐
74	**3D Shapes, Plans and Elevations** Faces, edges, vertices, nets, plans and elevations	All	3	☐	☐	☐
75	**Reflection, Rotation and Translation** Performing and describing these transformations	All	3	☐	☐	☐
76	**Angles in Parallel Lines** Alternate, corresponding and co-interior angles, with reasons	All	4	☐	☐	☐
77	**Angles in Polygons** Interior and exterior angles of regular and irregular polygons	All	4	☐	☐	☐
78	**Circles: Circumference and Area** Using π to find the circumference and area of a circle	All	4	☐	☐	☐
79	**Volume and Surface Area of Prisms** Cuboids, prisms and cylinders	All	4	☐	☐	☐
80	**Pythagoras' Theorem** Finding a missing side in a right-angled triangle	All	4	☐	☐	☐
81	**Arcs and Sectors** Finding arc lengths and sector areas	All	5	☐	☐	☐
82	**Enlargement** Enlarging shapes by positive and fractional scale factors from a centre	All	5	☐	☐	☐
83	**Constructions and Loci** Bisectors, perpendiculars and regions that meet given rules	All	5	☐	☐	☐
84	**Bearings** Measuring and calculating three-figure bearings	All	5	☐	☐	☐
85	**Trigonometry: SOH CAH TOA** Finding missing sides and angles in right-angled triangles	All	5	☐	☐	☐
86	**Exact Trigonometric Values** Sin and cos of 0°, 30°, 45°, 60° and 90°, and tan of 0°, 30°, 45° and 60°	All	5	☐	☐	☐
87	**Congruent Triangles** Conditions for congruence: SSS, SAS, ASA and RHS	All	5	☐	☐	☐
88	**Similar Shapes** Finding missing lengths in similar shapes	All	5	☐	☐	☐
89	**Vectors** Column vectors; adding, subtracting and multiplying by a scalar	All	5	☐	☐	☐

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
90	**Spheres, Cones and Pyramids** Volume and surface area of spheres, cones and pyramids	All	6	☐	☐	☐
91	**Congruence Proofs** Proving that two triangles are congruent	Higher	6	☐	☐	☐
92	**Sine Rule and Cosine Rule** Finding sides and angles in any triangle	Higher	7	☐	☐	☐
93	**Area of a Triangle Using ½ab sin C** Finding the area of any triangle using trigonometry	Higher	7	☐	☐	☐
94	**3D Pythagoras and Trigonometry** Lengths and angles in cuboids, pyramids and other 3D shapes	Higher	7	☐	☐	☐
95	**Circle Theorems** Applying the circle theorems, with reasons	Higher	7	☐	☐	☐
96	**Similar Areas and Volumes** Using length, area and volume scale factors	Higher	7	☐	☐	☐
97	**Negative Scale Factors and Combined Transformations** Enlargement by a negative scale factor; describing combined transformations	Higher	7	☐	☐	☐
98	**Frustums and Composite Solids** Volume and surface area of frustums and shapes made from several solids	Higher	7	☐	☐	☐
99	**Vector Proof** Using vectors to prove geometric results, such as parallel lines	Higher	8	☐	☐	☐

Probability

7 topics · 1 Higher only

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
100	**Basic Probability** The probability scale and probabilities that add up to 1	All	2	☐	☐	☐
101	**Sample Spaces and Listing Outcomes** Listing all outcomes using tables and sample space diagrams	All	3	☐	☐	☐
102	**Two-Way Tables and Frequency Trees** Organising information and finding probabilities from it	All	3	☐	☐	☐
103	**Relative Frequency and Expected Outcomes** Using experiments to estimate probability and predict results	All	4	☐	☐	☐
104	**Venn Diagrams and Set Notation** Using Venn diagrams and notation such as A ∩ B and A ∪ B	All	5	☐	☐	☐
105	**Tree Diagrams** Probabilities of combined independent events	All	5	☐	☐	☐

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
106	**Conditional Probability** Dependent events using tree diagrams, Venn diagrams and two-way tables	Higher	7	☐	☐	☐

Statistics

9 topics · 2 Higher only

NO.	TOPIC AND WHAT IT INCLUDES	TIER	GRADE	NOT YET	NEARLY	CONFIDENT
107	**Mean, Median, Mode and Range** Finding averages and the range from a list of data	All	2	☐	☐	☐
108	**Charts and Diagrams** Bar charts, pictograms, vertical line charts and pie charts	All	3	☐	☐	☐
109	**Time Series** Plotting and interpreting time series graphs	All	3	☐	☐	☐
110	**Sampling and Bias** Populations, samples and how to avoid bias	All	4	☐	☐	☐
111	**Averages From Frequency Tables** Including an estimated mean from grouped data	All	4	☐	☐	☐
112	**Scatter Graphs and Correlation** Lines of best fit, correlation and outliers	All	4	☐	☐	☐
113	**Comparing Distributions** Comparing data sets using an average and a measure of spread	All	4	☐	☐	☐
114	**Cumulative Frequency and Box Plots** Drawing and interpreting them, including the interquartile range	Higher	6	☐	☐	☐
115	**Histograms** Drawing and interpreting histograms using frequency density	Higher	7	☐	☐	☐

TRACK YOUR PROGRESS

MY PROGRESS SUMMARY

Count your ticks for each unit and write them in. Fill this in again every month to see how far you've come.

UNIT	TOPICS	NOT YET	NEARLY	CONFIDENT
Number	20			
Algebra	37			
Ratio, Proportion and Rates of Change	13			
Geometry and Measures	29			
Probability	7			
Statistics	9			
Total	**115**			

REVISION TIPS THAT WORK

Little and Often

20 to 30 minutes of maths on most days beats one long session at the weekend.

Practise, Don't Just Read

Do exam-style questions. Reading notes feels useful, but solving questions is what builds marks.

Learn From Mistakes

Keep a list of questions you got wrong and try them again a week later.

Practise Without a Calculator

One of your three papers is non-calculator, so keep your written methods sharp.

Want a Plan Built Around This Checklist?

Book a free 90-minute lesson. I'll find exactly where your child is and write a personal plan for every topic they need.

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