# IGCSE Maths Topic Checklist

Cambridge 0580 Core and Extended · Edexcel 4MA1 Foundation and Higher

**How to use it:** for each line, tick **G** if your child could do it in the exam today, **A** if they could with a reminder, **R** if not. Work on the ambers first, then the reds.

## Cambridge IGCSE 0580 checklist, Core and Extended

| 1. Number | R | A | G |
|---|---|---|---|
| **C1.1 / E1.1** Types of number: primes, factors, multiples, HCF, LCM, rational and irrational · Core + Extended | | | |
| **C1.2 / E1.2** Sets and Venn diagrams · Core + Extended (Core Venn diagrams use two sets only) | | | |
| **C1.3 / E1.3** Powers and roots · Core + Extended | | | |
| **C1.4 / E1.4** Fractions, decimals and percentages · Core + Extended (Extended adds recurring decimals to fractions) | | | |
| **C1.5–C1.6 / E1.5–E1.6** Ordering; the four operations with negatives and order of operations · Core + Extended | | | |
| **C1.7 / E1.7** Indices I · Core + Extended (Extended adds fractional indices) | | | |
| **C1.8–C1.9 / E1.8–E1.9** Standard form; estimation to significant figures and decimal places · Core + Extended | | | |
| **C1.10 / E1.10** Limits of accuracy · Core + Extended (Extended adds bounds of calculations) | | | |
| **C1.11–C1.13 / E1.11–E1.13** Ratio and proportion; rates; percentages including reverse percentages and interest · Core + Extended | | | |
| **C1.14–C1.16 / E1.14–E1.16** Using a calculator; time; money · Core + Extended | | | |
| **E1.17** Exponential growth and decay · Extended only | | | |
| **E1.18** Surds, including rationalising the denominator · Extended only | | | |

| 2. Algebra and graphs | R | A | G |
|---|---|---|---|
| **C2.1 / E2.1** Introduction to algebra and substitution · Core + Extended | | | |
| **C2.2 / E2.2** Expanding and factorising · Core + Extended (Extended adds harder quadratics and difference of two squares) | | | |
| **E2.3** Algebraic fractions · Extended only | | | |
| **C2.4 / E2.4** Indices II · Core + Extended | | | |
| **C2.5 / E2.5** Equations: linear, simultaneous, changing the subject · Core + Extended (Extended adds quadratics by factorising, completing the square and the formula) | | | |
| **C2.6 / E2.6** Inequalities · Core + Extended (Extended adds regions on a graph) | | | |
| **C2.7 / E2.7** Sequences and the nth term · Core + Extended | | | |
| **E2.8** Direct and inverse proportion · Extended only | | | |

| 2. Algebra and graphs | R | A | G |
|---|---|---|---|
| **C2.9 / E2.9** Graphs in practical situations · Core + Extended (Extended adds speed-time graphs and area under them) | | | |
| **C2.10–C2.11 / E2.10–E2.11** Graphs of functions; sketching curves · Core + Extended | | | |
| **E2.12** Differentiation, gradients and turning points · Extended only | | | |
| **E2.13** Functions: domain, range, inverse and composite · Extended only | | | |

| 3. Coordinate geometry | R | A | G |
|---|---|---|---|
| **C3.1–C3.3 / E3.1–E3.3** Coordinates; drawing linear graphs; gradient · Core + Extended | | | |
| **E3.4** Length and midpoint of a line segment · Extended only | | | |
| **C3.5–C3.6 / E3.5–E3.6** Equations of straight lines; parallel lines · Core + Extended | | | |
| **E3.7** Perpendicular lines · Extended only | | | |

| 4. Geometry | R | A | G |
|---|---|---|---|
| **C4.1–C4.3 / E4.1–E4.3** Geometrical terms; constructions; scale drawings and bearings · Core + Extended | | | |
| **C4.4 / E4.4** Similarity · Core + Extended (Extended adds areas and volumes of similar shapes) | | | |
| **C4.5–C4.6 / E4.5–E4.6** Symmetry; angles · Core + Extended | | | |
| **C4.7 / E4.7** Circle theorems I · Core + Extended | | | |
| **E4.8** Circle theorems II · Extended only | | | |

| 5. Mensuration | R | A | G |
|---|---|---|---|
| **C5.1 / E5.1** Units of measure · Core + Extended | | | |
| **C5.2 / E5.2** Area and perimeter · Core + Extended | | | |
| **C5.3 / E5.3** Circles, arcs and sectors · Core + Extended | | | |
| **C5.4–C5.5 / E5.4–E5.5** Surface area and volume; compound shapes · Core + Extended | | | |

| 6. Trigonometry | R | A | G |
|---|---|---|---|
| **C6.1 / E6.1** Pythagoras' theorem · Core + Extended | | | |
| **C6.2 / E6.2** Right-angled triangles, including bearings · Core + Extended | | | |
| **E6.3** Exact trigonometric values · Extended only | | | |
| **E6.4** Trigonometric graphs and equations from 0° to 360° · Extended only | | | |
| **E6.5** Sine rule, cosine rule and $\frac{1}{2}ab \sin C$, including the ambiguous case · Extended only | | | |
| **E6.6** Pythagoras and trigonometry in three dimensions · Extended only | | | |

| 7. Transformations and vectors | R | A | G |
|---|---|---|---|
| **C7.1 / E7.1** Reflection, rotation, enlargement and translation · Core + Extended (Core: positive and fractional scale factors only; Extended adds negative scale factors) | | | |
| **E7.2–E7.4** Vectors in two dimensions, magnitude, vector geometry · Extended only | | | |

| 8. Probability | R | A | G |
|---|---|---|---|
| **C8.1–C8.2 / E8.1–E8.2** Introduction to probability; relative and expected frequency · Core + Extended | | | |
| **C8.3 / E8.3** Combined events with sample spaces, tree and Venn diagrams · Core + Extended | | | |
| **E8.4** Conditional probability · Extended only | | | |

| 9. Statistics | R | A | G |
|---|---|---|---|
| **C9.1–C9.2 / E9.1–E9.2** Classifying and interpreting data · Core + Extended | | | |
| **C9.3 / E9.3** Averages and range · Core + Extended (Extended adds quartiles, interquartile range and grouped-data estimates) | | | |
| **C9.4–C9.5 / E9.4–E9.5** Charts and diagrams; scatter diagrams · Core + Extended | | | |
| **E9.6** Cumulative frequency diagrams · Extended only | | | |
| **E9.7** Histograms with unequal class widths · Extended only | | | |

## Edexcel 4MAl checklist, Foundation and Higher

| 1. Numbers and the number system | R | A | G |
|---|---|---|---|
| **1.1–1.3** Integers, fractions, decimals · Foundation + Higher | | | |
| **1.4** Powers and roots · Foundation + Higher (Higher adds surds and rationalising) | | | |
| **1.5** Set language, notation and Venn diagrams · Foundation + Higher | | | |
| **1.6–1.7** Percentages; ratio and proportion · Foundation + Higher | | | |
| **1.8** Degree of accuracy · Foundation + Higher (Higher adds bounds of calculations) | | | |
| **1.9–1.11** Standard form; applying number; calculators · Foundation + Higher | | | |

| 2. Equations, formulae and identities | R | A | G |
|---|---|---|---|
| **2.1–2.3** Symbols, algebraic manipulation, expressions and formulae · Foundation + Higher (Higher adds triple brackets and algebraic fractions) | | | |
| **2.4** Linear equations · Foundation + Higher | | | |
| **2.5** Proportion · Foundation + Higher (Higher sets it up algebraically) | | | |
| **2.6** Simultaneous equations · Foundation + Higher (Higher adds one linear with one quadratic) | | | |
| **2.7** Quadratic equations · Higher only | | | |
| **2.8** Inequalities · Foundation + Higher (Higher adds quadratic inequalities) | | | |

| 3. Sequences, functions and graphs | R | A | G |
|---|---|---|---|
| **3.1** Sequences · Foundation + Higher (Higher adds arithmetic series) | | | |
| **3.2** Function notation, including composite and inverse functions · Higher only | | | |
| **3.3** Graphs · Foundation + Higher (Higher adds perpendicular lines and transformations of graphs) | | | |
| **3.4** Calculus: differentiation, turning points, kinematics · Higher only | | | |

| 4. Geometry and trigonometry | R | A | G |
|---|---|---|---|
| **4.1–4.5** Angles, polygons, symmetry, measures, construction and loci · Foundation + Higher | | | |
| **4.6** Circle properties · Foundation + Higher (Higher adds the circle theorems) | | | |
| **4.7** Geometrical reasoning · Foundation + Higher | | | |
| **4.8** Trigonometry and Pythagoras · Foundation + Higher (Higher adds sine and cosine rules and 3D problems) | | | |
| **4.9–4.10** Mensuration of 2D shapes; 3D shapes and volume · Foundation + Higher | | | |
| **4.11** Similarity · Foundation + Higher (Higher adds area and volume scale factors) | | | |

| 5. Vectors and transformation geometry | R | A | G |
|---|---|---|---|
| **5.1** Vectors · Higher only | | | |
| **5.2** Transformation geometry · Foundation + Higher | | | |

| 6. Statistics and probability | R | A | G |
|---|---|---|---|
| **6.1** Graphical representation of data · Foundation + Higher (Higher adds histograms and cumulative frequency) | | | |
| **6.2** Statistical measures · Foundation + Higher (Higher adds quartiles and interquartile range) | | | |
| **6.3** Probability · Foundation + Higher (Higher adds dependent events and conditional probability) | | | |

From **ClassArc**, live one-to-one online maths tutoring with the same teacher every week. Full guide, updates and answers to common questions: **theclassarc.com/resources/igcse-maths-checklist**. Free to print and share with students and families; please do not sell it or remove this footer. If you share it online, link to the page above rather than uploading the file, so everyone gets the latest version.