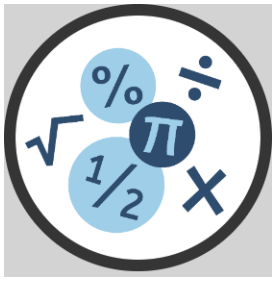
Name _____

September 2025

GCSE MATHEMATICS (Higher)



"The only way to learn mathematics is to do mathematics" – Paul. R. Halmos

Specification and Assessment

The specification is Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Mathematics (1MA1). All external exams will be sat at the end of Year 11.

Paper 1	Non-Calculator	80 marks	Duration: 1hr30
Paper 2	Calculator	80 marks	Duration: 1hr30
Paper 3	Calculator	80 marks	Duration: 1hr30

This revision booklet provides comprehensive coverage of ALL topics, relating to YOUR tier of entry, i.e. it's different for Higher and Foundation students. Doing 20-30 minutes of these per day, every day, during your revision will pay off in the long run. Please target the topics upon which you are weakest.

ANY topic you have studied in Maths, EVER, could come up on Paper 1, 2 or 3. There is no choice element; answer ALL the questions in the exam booklet. In practice, however, some topics are MORE LIKELY to come up on certain papers than others. These include:

Paper 1 – Multiplying or Dividing Decimals, Fraction Arithmetic, Surds, Recurring Decimal to a Fraction, and Functions.

Paper 2 & 3 - Trigonometry, Circles, Circle Theorems, Pythagoras' Theorem, Averages from a Frequency Table, Compound Interest Percentages, Bounds

** Once Paper 1 has happened, we will update you with the remaining topics, which therefore become more likely to be on Paper 2 and Paper*

Once Paper 1 & 2 have happened, we will update you with the remaining topics, which therefore become more likely to be on Paper 3.

Topics to revise:

Please use this list to tick off topics you are happy with and keep track of topics you need to re-visit.

***Please note that due to the amount of content in Higher Tier, you will not have been taught all these topics YET. Your maths teacher can advise you further on this.*

Topics	Revised? ✓
Expand/Factorise	
Prime Factorisation	
Percentages (Change/Profit, Reverse, Increase/Decrease)	
Mixed Number Operations	
Changing the Subject	
Inequalities	
Reciprocals	
Error Intervals	
Averages from Tables	
Using a Calculator	
Straight Line Graphs (Table of Values)	
Estimation	
Area/Circumference of Circles	
Sequences (Linear, Quadratic, Geometric, Fibonacci)	
Index Laws (including fractional and negatives)	
Quadratics (Expand, Factorise, Solve)	
Direct & Inverse Proportion	
Compound Measures (Distance/Speed/Time, Density/Mass/Volume, Force/Area/Pressure)	
Scatter Diagrams	
Transformations (TERR – Translations, Enlargement (positive, negative and fractional), Reflection, Rotation, Invariance)	
Pythagoras	
Drawing & Interpreting Pie Charts	
Column Vectors	
Recipes	
Standard Form	
Frequency Polygons	
Venn Diagrams	
Best Buys + Exchange Rate	
Plans and Elevations	
Volume (Prism, Cone, Sphere, Cylinder)	
Simultaneous Equations (Linear & Quadratic)	
Surface Area (All shapes)	
Distance-Time Graphs	
Angles in Polygons (Exterior & Interior)	
Compound Interest	
Trigonometry (SOHCAHTOA & Exact Values)	
Probability In Tables	
Quadratic Graphs (Drawing and Interpreting)	
Construction & Loci	
HCF/LCM	
Similar Shapes (Length, Area and Volume)	

Angles in Parallel Lines	
Finding Equation of a Straight Line (y=mx+c, parallel lines, perpendicular lines)	
Forming and Solve Equation	
Area of Trapezium	
Probability Tree Diagrams	
Midpoints	
Types of Graphs (Linear, Quadratic, Cubic, Reciprocal, Direct/Inverse Proportion, Exponential	
Arc Length & Area of a Sector	
Box Plots	
Cumulative Frequency	
Histograms	
Comparing Distributions	
Expand Triple Brackets	
Inequality Regions	
Capture Re-capture	
Estimating Powers and Roots	
Product Rule for Counting	
Graphs of Trigonometric Functions	
Surds	
Equation of Circles (including tangents to circle)	
Solving Simultaneous Equations Graphically	
Quadratic Formula	
Functions	
Recurring Decimals to Fractions	
Completing the Square	
Conditional Probability	
Algebraic Probability	
Trigonometry (Area of Triangle, Sine Rule, Cosine Rule)	
3D Trigonometry	
Iteration (Standard and Wordy)	
Bounds	
Algebraic Proof	
Solving Quadratic Inequalities	
Circle Theorems	
Algebraic Fractions (Simplifying and Solving)	
Bearings	
Velocity Time Graphs (Drawing a tangent and using strips)	
Transformations of Graphs	
Vectors	

Resources

Textbooks: CGP GCSE Maths Revision Guide (Higher)

Videos:

1. The GCSE Maths Tutor - YouTube
2. The Ultimate GCSE Maths Revision Tool • Edexcel Higher (youtube.com)
3. Gcse Maths Tutor Online - Video Tutorials – ExamSolutions

Websites

Website	Link	What is available
Sparx Maths	www.sparxmaths.com	• Bespoke revision programme
Maths Genie	www.mathsgenie.co.uk	• Exam questions on specific topics • Past Papers with video solutions
United Learning Curriculum Website	https://curriculum.unitedlearning.org.uk/Pupil	• Video lessons on specific topics
Third Space Learning	www.thirdspacelearning.com	• AI maths tutoring (please speak to Mr Barratt about this)
On Maths	www.onmaths.com	• Complete online practice papers
Bicen Maths	https://www.youtube.com/@BicenMathsGCSE/videos	• Topic specific videos (uses exam questions)

TikTok Accounts

@hannahkettlemaths
@freegcsemathsteacher
@thecalculatorguide

Revision Activities

1

Testing yourself using great flashcards

There are some excellent free flash cards available online (www.collins.co.uk).

BBC Bitesize has interactive ones you can use online (www.bbc.co.uk/bitesize/topics)

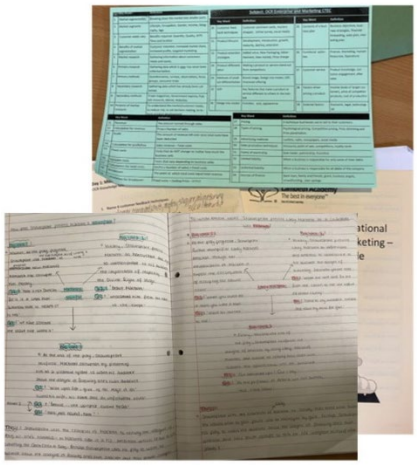
You can use these independently, testing yourself or you can ask friends/family to test you.

2

Doing past papers and questions

Past Papers are an excellent way to revise, the more exam questions you see, the more familiar you become with them. Please see the link above for access to past papers (www.mathsgenie.co.uk), they are also available in the Year 11 pod or from your maths teacher.

3 **Read – cover – write check**



Don't just make notes! Read your notes or mark schemes, cover them up, re-write what you can remember and then check your answers.

Command Words

Command words		What you need to know
1	**Calculate**	A calculator and some working will be needed.
2	**Change**	Usually convert from one unit to another; either using known metric unit conversions or the use of a conversion graph.
3	**Complete**	Fill in missing values. For example, on a probability tree diagram or a table of values.
4	**Describe**	Write a sentence that gives the features of the situation. For example, describing a transformation or trend in a graph.
5	**Draw**	Produce an accurate drawing (unless a sketch is being drawn). For example, draw a graph, draw an accurate elevation of a pyramid.
6	**Draw a sketch of... Sketch**	Produce a drawing that does not have to be drawn to scale **or** a graph that is drawn without working out each coordinate. For example, sketch a graph, sketch a cylinder.
7	**Expand**	Remove brackets.
8	**Expand and simplify**	Remove brackets and the collect like terms.
9	**Explain**	Write a sentence or a mathematical statement to show how you got to your answer or reached your conclusion.
10	**Express**	Re-write in another form, some working may be needed.
11	**Factorise**	Insert brackets by taking out common factors.

Command words		What you need to know
12	**Factorise fully**	Insert brackets by taking out **all** the common factors.
13	**Find**	Some working will be needed to get to the final answer.
14	**Give a reason**	Must be clear and accurate reasons. If the reasons are geometrical then make sure you: - provide a reason for each stage of working (if required), - use correct geometric terminology.
15	**Justify**	Show all working and/or give a written explanation.
16	**Prove**	More formal than 'show', all steps must be present. In the case of a geometrical proof, reasons must be given.
17	**Prove algebraically**	Use algebra in the proof.
18	**Show**	All working needed to get to a given answer **or** complete a diagram to show given information.
19	**Simplify**	Simplify the given expression
20	**Simplify fully**	Simplify the given expression. Answer must be given in its simplest form.
21	**Solve**	Find the solution of an equation or inequality.
22	**Solve algebraically**	Find the solution of an equation or inequality; algebraic manipulation **must** be shown.
23	**Write down**	No working is needed.
24	**Write**	No working needed for 1 mark questions. Working may be needed questions with more than 1 mark.
25	**Work out**	Some working will be needed in order to get the answer.