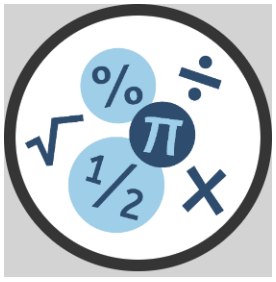
Name _____

September 2025

GCSE MATHEMATICS (Foundation)



"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 - Written Multiplication and Division methods, Prime Factor Decomposition, all Operations with Fractions, Percentages.

Paper 2 & 3 - Pythagoras' Theorem, Trigonometry, and Averages from a Frequency Table. Compound Interest Percentages, Circles.

** 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.

Topics	Revised? ✓
Ordering integers and decimals	
Rounding	
Indices	
Metric Unit Conversions	
Place Value	
Primes, Squares, Factors, Multiples, Cubes	
Expanding Single Brackets	
Fraction of an Amount	
Fractions, Decimals, Percentages	
Order of Operations (BIDMAS)	
Simplifying Algebraic Terms	
Area/Perimeter (rectangles, triangles, trapezium, parallelogram, compound shapes)	
The Probability Scale	
Percentage of an Amount	
Money Calculations	
Measuring Lines and Angles	
Write as a Fraction/Ratio/Percentage	
Negative Numbers	
Relating Ratio to Fractions	
Number Machines	
Averages from a List (Mode, Median, Mean, Range)	
Bar Charts (Drawing and Interpreting)	
Solving Equations (one step, two step, unknowns on both sides)	
Listing Outcomes/Combinations	
Time Calculations	
Coordinates	
Pictograms	
Probability	
Use of a Calculator	
Fraction Operations	
Two-Way Tables	
Currency Conversions	
Faces, Edges, Vertices, Plans/Elevations	
Factorising, Solving Equations and Inequalities, Inequality Diagrams	
Angle Facts (Angles in polygons, Angles in Parallel Lines)	
Decrease by a Percentage	
Ordering Fractions	
Area/Circumference of Circles	
Index Laws (Multiplication/Division)	
Parts of a Circle	
Conversion Graphs	
Stem and Leaf Diagrams	
Pie Charts (Drawing and Interpreting)	
Maps/Scales and Bearings	
Frequency Trees/Probability Tree Diagrams	

Units Conversions	
Algebraic Language Writing Expressions	
Substitution	
Straight Line Graphs (y=mx+c)	
Sequences (term-to-term, nth term, diagram sequences, Fibonacci, geometric)	
Prime Factorisation	
Estimation	
Distance Time Graphs	
Percentage Change/Profit	
Compound Measures (Distance/Speed/Time, Density/Mass/Volume, Force/Area/Pressure)	
Converting Units of Area	
Recipes	
Application of Ratio	
Best Buys	
Averages from Frequency Tables (mode, median, mean, range)	
Scatter Diagrams	
Transformations (TERR – Translation, Enlargement, Reflection, Rotation)	
Angles in Regular and Irregular Polygons	
HCF/LCM	
Mixed Number Operations	
Direct & Inverse Proportion	
Simple/Compound Interest	
Reciprocals	
Error Intervals	
Frequency Polygons	
Quadratic Graphs	
Types of Graph (Linear, Quadratics, Cubic, Reciprocal)	
Column Vectors	
Standard Form	
Quadratics (Expand, Factorise, Solve)	
Similar Shapes	
Changing the Subject	
Forming and Solving Equations	
Gradients and Intercepts	
Venn Diagrams	
Sector Area/Arc Length	
Index Laws (bracket raised to a power)	
Volume (Prisms, Cones, Spheres)	
Trigonometry including Exact Trig Values	
Pythagoras	
Simultaneous Equations	

Resources

Textbooks: CGP GCSE Maths Revision Guide (Foundation)

Videos:

1. The GCSE Maths Tutor - YouTube
2. The Ultimate GCSE Maths Revision Tool • Edexcel Foundation (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

TikTok Accounts

@hannahkettlemaths
@freegcsemathsteacher
@thecalculatorguide

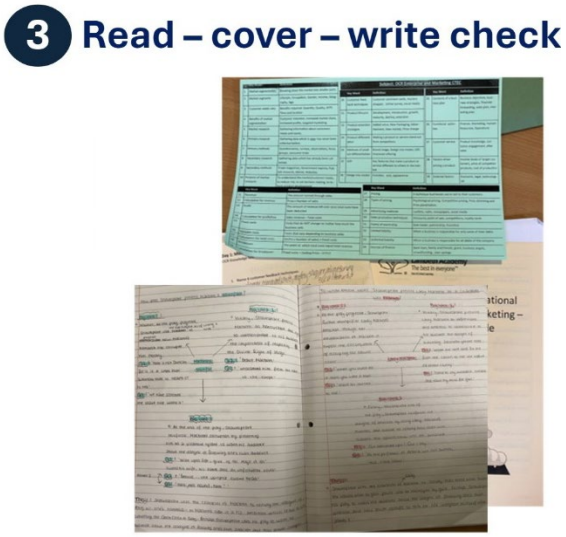
Revision Activities

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.

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.



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.