Maths Higher GCSE

Students sitting GCSE Higher can be awarded grades 3-9. The exam includes some 'crossover' questions which also appear on the Foundation tier, but the majority of the questions are aimed to assess students for grades 6-9. Mathematics is a skill based subject, and therefore the most effective way to revise is by practicing questions. The table below lists our recommended sources to find questions, and offers some guidance on how to use each one.

Name of Source, location or link	Description	Guidance for use
Sparx revision list for cross-over questions	A full list of the topics that also appear on the Higher paper and are therefore aimed at grades 3-5.	Students can RAG rate each topic to show their strengths and areas to improve, and then use the Sparx codes to do independent practice of topics.
Sparx revision list for higher questions	A full list of topics that only appear on the Higher papers and are therefore aimed at grades 6-9.	Students can RAG rate each topic to show their strengths and areas to improve, and then use the Sparx codes to do independent practice of topics.
Sparx Maths	An online question generator which will mark students' answers for them.	Students are very familiar with using Sparx for homework from years 7-10. In year 11 they can search the codes from the revision lists in the independent learning tool and Sparx will give them questions to practice, offer videos for help if needed, and will mark their answers right or wrong immediately.
Doctor Frost Learning	An online question generator which will mark students' answers for them.	This is our homework tool for year 11. Students can also do independent learning by searching for a topic, or can choose to do a past paper online, and their answers will be marked immediately.
Maths Genie	Video explanations, practice questions & exam question booklets organised by grade, solutions provided.	Students should concentrate on topics from grades 4-9. These questions are best done on paper and can be self marked using the solutions.

Name of Source, location or link	Description	Guidance for use
Method Selection by Maths Genie	One page tests organised by grade on mixed topics for students to practice selecting the correct methods.	These questions are best done on paper and can be self marked using the solutions. There are 5 available at each grade range so could be saved for the weeks leading up to the exams.
Corbett Maths	Video explanations, practice questions, exam questions and solutions provided.	These questions are best done on paper and can be self marked using the solutions. We suggest using Control F to find topics quickly.
First Class Maths	Video explanations, practice questions & exam questions organised by grade.	These questions are best done on paper and can be self marked using the solutions. There are also percentages indicating how often each topic appears in the exam.
Spicy Questions by First Class Maths	Problem solving questions for those aiming for a grade 8 or 9.	Questions released over time so keep an eye out and use these to challenge yourself.
Past Papers	Links to past papers and markschemes.	These questions are best done on paper and can be self marked using the markschemes. You will be provided with some full printed papers over the course of year 11, but this link gives you access to lots more.
GCSE Higher Formula Sheet	The formula sheet that will be provided with your exam paper.	Refer to this when doing homework, revision and past papers.
GCSE Higher facts to memorise	There are some things that you just need to know.	Consider having someone at home test you on these to see how much you know already, then stick up the facts you don't know around your bedroom, or make flash cards, to help you memorise them.

Crossover Topic Revision List from Sparx Maths

Number

Topic	Topic code	R	A	G
Fractions	U224, U538, U793			
Factors, multiples and primes	U739, U250			
Percentage change	U671, U332, U988			
Standard form	U330, U534, U264, U290			
Error intervals	U657			

Algebra

Topic	Topic code	R	A	G
Linear equations	U325, U870, U599			
Linear inequalities	U759, U738, U145, U337			
Index laws	U662			
Linear simultaneous equations	U760, U757, U836, U137			
Linear graphs and coordinates	U315, U669, U477, U848, U377			
Quadratic graphs and equations	U989, U667, U228, U601			

Ratio and proportion

Topic	Topic code	R	A	G
Ratio	U687, U753, U176, U577, U921, U865			
Speed	U151			
Density and pressure	U910, U527			
Proportion	U721, U357, U610			

Geometry

Topic	Topic code	R	A	G
Area	U226, U343, U950			
Volume	U786, U174, U915			
Angles	U655, U826, U329, U427			
Pythagoras' theorem	U385			
Trigonometry	U605, U283, U545			
Transformations	U196, U799, U696, U519, U766			

Probability

Topic	Topic code	R	A	G
Calculating probabilities	U408, U510, U683, U580			
Expected outcomes	U166			
Tree diagrams	U558, U729			
Set notation	U748, U296			

Statistics

Topic	Topic code	R	A	G
Averages	U717, U569			
Averages with grouped data	U877			
Sampling	U162			
Scatter graphs	U199, U277, U128			
Frequency polygons	U840			

Higher Topic Revision List from Sparx Maths

Number

Topic	Topic code	R	A	G
Calculating with roots and fractional indices	U851, U985, U772, U299			
Converting recurring decimals to fractions	U689			
Surds	U338, U663, U872, U499			
Rationalising the denominator	U707, U281			
Error intervals	U657, U301, U587			

Algebra

Topic	Topic code	R	A	G
Expanding triple brackets	U606			
Operations with algebraic fractions	U685, U457, U824			
Factorising quadratic expressions: ax^2+bx+c	U858			
Simplifying algebraic fractions	U294			
Factorising to solve quadratics equations	U228, U960			
Using the quadratic formula	U665			
Completing the square to solve quadratics	U397, U589			
Quadratic equations in context	U150			
Quadratic simultaneous equations	U547			
Index laws	U235, U694, U662			
Equation of a straight line: Perpendicular lines	U898			
Quadratic graphs: Turning points	U769			
Quadratic simultaneous equations on graphs	U875			
Exponential graphs	U229			
Exponential growth and decay problems	U988			
Trigonometric graphs	U450			
Graph transformations	U598, U487, U455			
Velocity-time graphs	U937, U562, U611			
Rate of change graphs	U638, U652, U862			
Estimating gradient from a curve	U800			
Estimating area under a curve	U882			
Equation of a circles and tangents	U567			
Linear inequalities as graph regions	U747			
Quadratic inequalities	U133			
Functions	U637, U895, U448, U996			
Recurrence relations	U171			
Quadratic sequences	U206			
Iteration and numerical methods	U434, U168			
Algebraic proof	U582			

Higher Topic Revision List from Sparx Maths (continued)

Ratio and proportion

Topic	Topic code	R	A	G
Algebraic direct and inverse proportion	U407, U138			
Compound units: Density problem solving	U910			

Geometry

Topic	Topic code	R	A	G
Congruence proofs	U866, U887			
Enlargements	U134			
Describe combined transformations	U766			
Circle theorems: Angles inside a circle	U459, U251			
Circle theorems: Tangents and chords	U489, U130			
Circle theorems problems	U808			
Prove circle theorems	U807			
Volume of frustums	U350			
Volume: Problem solving	U543, U426			
Similar Shapes: Area and volume	U630, U110			
Pythagoras' Theorem in 2D and 3D	U385, U541			
Right-angled trigonometry: Problem solving	U319, U283, U545, U967			
3D trigonometry	U170			
The area rule	U592			
Sine rule	U952			
Cosine rule	U591			
Trigonometry and bearings	U164			
Vectors problems	U781, U560			

Probability

Topic	Topic code	R	A	G
Product rule for counting	U369			
Conditional probability	U246, U821, U806			
Probability from Venn diagrams	U476, U748, U699			

Statistics

Topic	Topic code	R	A	G
Averages	U877, U717			
Cumulative frequency diagrams	U182, U642			
Box plots	U879, U837, U507			
Frequency polygons	U840			
Histograms	U814, U983, U267			
Capture-recapture	U328			

Formulae Sheet Given in Exam

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

Area of a trapezium $= \frac{1}{2}(a+b)h$

Volume of a prism = area of cross section × length

Quadratic formula

The solution of $ax^2 + bx + c = 0$ where $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$