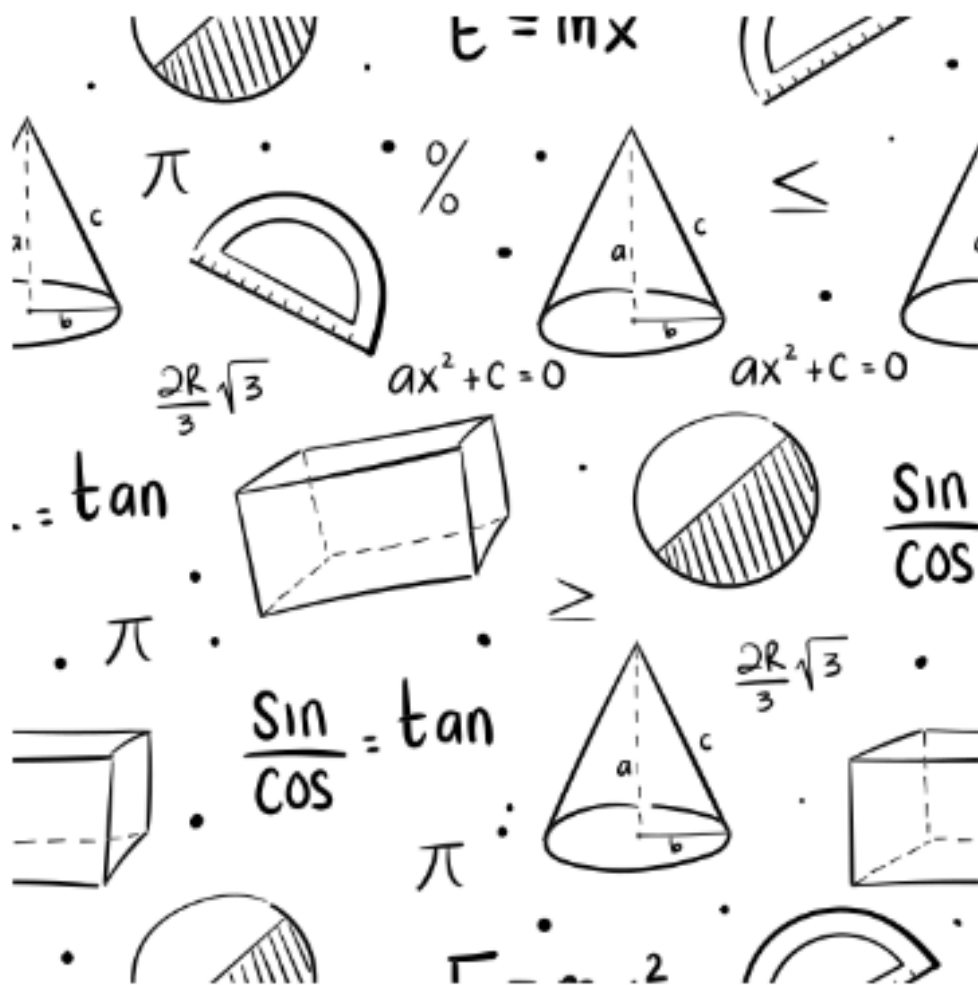


Weatherhead High School

GCSE Maths Higher Revision Guide

Year 11 December Mock Exams Topic Lists



How do I revise Maths?

You only revise Maths by doing Maths. If you've not got a pen and paper in front of you to do some Maths, then you're not revising Maths!

On the next few pages are all of the topics that are on the full GCSE course. Next to each is the Mathswatch clip number for that topic.

Each week, you need to pick 8 clip numbers from the list to revise. Fill in your topic choices in the planner at the back of this booklet.

For each clip number/topic you need to do the following (at least):

- Watch One Minute Maths
- Go to Interactive Questions and do 3 standard and 3 harder questions.

Once you've done that topic, write the date next to the topic in the main list so you know when you revised that. You might need to go back to topics you revised earlier on.

What do I do if I'm stuck?

- Watch the longer Mathswatch video, giving the questions ago by pausing the video and then playing for the answers.
- If this hasn't worked, take a screenshot or a picture of the question on your phone and show it to your Maths teacher for help.
- Attend after school revision sessions, bringing the screenshots/pictures of questions you are stuck on.

Number

Clip No.	Title	Difficulty	Date complete
1	Place Value	1	
2	Ordering Integers	1	
3	Ordering Decimals	1	
4	Reading Scales	1	
5	Simple Mathematical Notation	1	
6a	Interpreting Real-Life Tables - Time	1	
6b	Interpreting Real-Life Tables - Timetables and Distance Tables	1	
17	Adding Integers and Decimals	2	
18	Subtracting Integers and Decimals	2	
19	Multiplying Integers	2	
20	Dividing Integers	2	
21	Inverse Operations	2	
22a	Money Questions - Non-Calculator Questions	2	
22b	Money Questions - Calculator Questions	2	
23	Negatives in Real Life	2	
24	Introduction to Fractions	2	
25	Equivalent Fractions	2	
26	Simplifying Fractions	2	
27	Half-Way Values	2	
28	Factors, Multiples and Primes	2	
29	Introduction to Powers/Indices	2	
30	Multiplying and Dividing by Powers of 10	2	
31	Rounding to the Nearest 10, 100, 1000	2	
32	Rounding to Decimal places	2	
66	Multiplying Decimals	3	
67	Dividing Decimals	3	
68a	Four Rules of Negatives - Adding and Subtracting	3	
68b	Four Rules of Negatives - Multiplying and Dividing	3	
69	Listing Strategies	3	
70	Comparing Fractions	3	
71a	Adding and Subtracting Fractions - A Standard Method	3	
71b	Adding and Subtracting Fractions - An Alternative Method	3	
72	Finding a Fraction of an Amount	3	
73	Multiplying Fractions	3	
74	Dividing Fractions	3	
75	BODMAS/BIDMAS	3	

Higher tier content is written in bold, italics and underlined.

Number

Clip No.	Title	Difficulty	Date complete
76	Reciprocals	3	
77	Calculator Questions	3	
78	Product of Primes	3	
79	Highest Common Factor (HCF)	3	
80	Lowest Common Multiple (LCM)	3	
81	Squares, Cubes and Roots	3	
82	Working with Indices	3	
83	Standard Form	3	
84	Decimals and Fractions	3	
85	Fractions, Percentages, Decimals	3	
86	Percentage of an Amount (Calc.)	3	
87	Percentage of an Amount (Non-Calc.)	3	
88	Change to a Percentage (Calc.)	3	
89	Change to a Percentage (Non-Calc.)	3	
90	Rounding to Significant Figures	3	
91	Estimating Answers	3	
92	Using Place Value	3	
131	Index Notation	4	
132	Introduction to Bounds	4	
154	Negative Indices	5	
155	Error Intervals	5	
156	Mathematical Reasoning	5	
177	<i><u>Recurring Decimals to Fractions</u></i>	6	
188	<i><u>Fractional Indices</u></i>	7	
189	<i><u>Recurring Decimals - Proof</u></i>	7	
206	<i><u>Upper and Lower Bounds</u></i>	8 - 9	
207a	<i><u>Surds - Introduction to Surds</u></i>	8 - 9	
207b	<i><u>Surds - Surd Expressions</u></i>	8 - 9	
207c	<i><u>Surds - Rationalising the Denominator</u></i>	8 - 9	

Higher tier content is written in bold, italics and underlined.

Algebra

Clip No.	Title	Difficulty	Date complete
7	Introduction to Algebraic Conventions	1	
8	Coordinates	1	
33	Simplifying - Addition and Subtraction	2	
34	Simplifying - Multiplication	2	
35	Simplifying - Division	2	
36	Function Machines	2	
37	Generating a Sequence - Term to Term	2	
93	Expanding Brackets	3	
94	Simple Factorisation	3	
95	Substitution	3	
96	Straight Line Graphs	3	
97	The Gradient of a Line	3	
98	Drawing Quadratic Graphs	3	
99	Sketching Functions	3	
100	Solving Equations using Flowcharts	3	
101	Subject of a Formula using Flowcharts	3	
102	Generating a Sequence from the nth Term	3	
103	Finding the nth Term	3	
104	Special Sequences	3	
133	Midpoint of a Line on a Graph	4	
134a	Expanding and Simplifying Brackets - Single Set of Brackets	4	
134b	Expanding and Simplifying Brackets - Double Set of Brackets	4	
135a	Solving Equations - Balancing	4	
135b	Solving Equations - Float & Ping	4	
136	Rearranging Simple Formulae	4	
137	Forming Formulae and Equations	4	
138	Inequalities on a Number Line	4	
139	Solve Linear Inequalities	4	
140	Simultaneous Equations Graphically	4	
141	Fibonacci Sequences	4	
157	Factorising and Solving Quadratics	5	
158	The Difference of Two Squares	5	
159a	Finding the Equation of a Straight Line - $y=mx+c$	5	
159b	Finding the Equation of a Straight Line - Gradient and Coordinates	5	
160	Roots and Turning Points of Quadratics	5	
161	Cubic and Reciprocal Graphs	5	
162	Simultaneous Equations Algebraically	5	
163	Geometric Progressions	5	

Higher tier content is written in bold, italics and underlined.

Algebra

Clip No.	Title	Difficulty	Date complete
178	<u>Product of Three Binomials</u>	6	
179	<u>Iteration - Trial and Improvement</u>	6	
180	<u>Iterative Processes</u>	6	
190	<u>Rearranging difficult Formulae</u>	7	
191	<u>Solving Quadratics with the Formula</u>	7	
192	<u>Factorising Hard Quadratics</u>	7	
193	<u>Algebraic Proof</u>	7	
194	<u>Exponential Functions</u>	7	
195a	<u>Trigonometric Graphs - Sine and Cosine</u>	7	
195b	<u>Trigonometric Graphs - Tangent</u>	7	
196a	<u>Transformation of Functions - Polynomial Functions</u>	7	
196b	<u>Transformation of Functions - Trigonometric Functions</u>	7	
197	<u>Equation of a Circle</u>	7	
198	<u>Regions</u>	7	
208	<u>Perpendicular Lines</u>	8 - 9	
209a	<u>Completing the Square - Basics</u>	8 - 9	
209b	<u>Completing the Square - Solving</u>	8 - 9	
209c	<u>Completing the Square - Sketching</u>	8 - 9	
210a	<u>Algebraic Fractions - Simplifying</u>	8 - 9	
210b	<u>Algebraic Fractions - Solving</u>	8 - 9	
211	<u>Simultaneous Equations with a Quadratic</u>	8 - 9	
212	<u>Solve Quadratic Inequalities</u>	8 - 9	
213	<u>Finding the nth Term of a Quadratic</u>	8 - 9	
214a	<u>Inverse Functions - Introduction</u>	8 - 9	
214b	<u>Inverse Functions - Harder Questions</u>	8 - 9	
215	<u>Composite Functions</u>	8 - 9	
216a	<u>Interpreting Graphs - Velocity-Time Graphs</u>	8 - 9	
216b	<u>Interpreting Graphs - Rate of Change</u>	8 - 9	

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Ratio

Clip No.	Title	Difficulty	Date complete
38	Introduction to Ratio	2	
39	Using Ratio for Recipe Questions	2	
40	Introduction to Percentages	2	
41	Value for Money	2	
42	Introduction to Proportion	2	
105	Exchanging Money	3	
106	Sharing using Ratio	3	
107	Ratios, Fractions and Graphs	3	
108	Increase/Decrease by a Percentage	3	
109	Percentage Change	3	
110	Reverse Percentage Problems	3	
111	Simple Interest	3	
142	Compound Units	4	
143	Distance-Time Graphs	4	
144	Similar Shapes	4	
164	Compound Interest and Depreciation	5	
199	<i><u>Direct and Inverse Proportion</u></i>	7	
200a	<i><u>Ratio Questions - Standard Questions</u></i>	7	
200b	<i><u>Ratio Questions - Ratios to Equations</u></i>	7	
200c	<i><u>Ratio Questions - Equations to Ratios</u></i>	7	

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Probability and Data

Clip No.	Title	Difficulty	Date complete
14	The Probability Scale	1	
15	Tally Charts and Bar Charts	1	
16	Pictograms	1	
57	Frequency Trees	2	
58	Listing Outcomes	2	
59	Calculating Probabilities	2	
60	Mutually Exclusive Events	2	
61	Two-Way Tables	2	
62	Averages and the Range	2	
63	Data - Discrete and Continuous	2	
64	Vertical Line Charts	2	
65	Frequency Tables and Diagrams	2	
125	Experimental Probabilities	3	
126	Possibility Spaces	3	
127a	Venn Diagrams - Introduction	3	
127b	Venn Diagrams - Notation	3	
128a	Representing Data - Pie Charts	3	
128b	Representing Data - Stem and Leaf Diagrams	3	
130a	Averages from a table - Basics	3	
130b	Averages from a table - Estimate for the Mean	3	
151	Simple Tree Diagrams	4	
152	Sampling Populations	4	
153	Time Series	4	
175	Harder Tree Diagrams	5	
176	Stratified sampling	5	
185	<u>Probability using Venn Diagrams</u>	6	
186	<u>Cumulative Frequency</u>	6	
187	<u>Boxplots</u>	6	
204	<u>And and Or Probability Questions</u>	7	
205	<u>Histograms</u>	7	

Higher tier content is written in bold, italics and underlined.

Geometry (Shape)

Clip No.	Title	Difficulty	Date complete
9	Simple Geometric Definitions	1	
10	Polygons	1	
11	Symmetries	1	
12a	Tessellations and Congruency - Tessellations	1	
12b	Tessellations and Congruency - Congruent Shapes	1	
13	Names of Angles	1	
43	Properties of Solids	2	
44	Nets	2	
45	Angles on a Line and at a Point	2	
46a	Measuring and drawing Angles - Measuring	2	
46b	Measuring and drawing Angles - Drawing	2	
47	Drawing a Triangle Using a Protractor	2	
48	Reflections	2	
49	Rotations	2	
50	Translations	2	
51	Plans and Elevations	2	
52	Perimeters	2	
53	Area of a Rectangle	2	
54	Area of a Triangle	2	
55	Area of a Parallelogram	2	
56	Area of a Trapezium	2	
112	Metric conversions	3	
113	Problems on Coordinate Axes	3	
114a	Surface Area of a Prism - Cuboids	3	
114b	Surface Area of a Prism - Triangular Prisms	3	
115	Volume of a Cuboid	3	
116	Circle Definitions	3	
117	Area of a Circle	3	
118	Circumference of a Circle	3	
119	Volume of a Prism	3	
120	Angles and Parallel Lines	3	
121	Angles in a Triangle	3	
122	Properties of Special Triangles	3	
123	Angle Sum of Polygons	3	
124	Bearings	3	

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Geometry (Shape)

Clip No.	Title	Difficulty	Date complete
145a	Constructing Perpendiculars - Bisecting a Line	4	
145b	Constructing Perpendiculars - From any Point	4	
145c	Bisecting an Angle	4	
146a	Constructing Perpendiculars - Bisecting a Line	4	
146b	Constructing Perpendiculars - From any Point	4	
147	Draw a Triangle Using Compasses	4	
148	Enlargements	4	
149	Tangents, Arcs, Sectors and Segments	4	
150a	Pythagoras' Theorem - A Simple Approach	4	
150b	Pythagoras' Theorem - An Algebraic Approach	4	
150c	Pythagoras' Theorem - Line on a Graph	4	
165	Loci	5	
166	Congruent triangles	5	
167	Sectors of a Circle	5	
168	Trigonometry	5	
169	Spheres	5	
170	Pyramids	5	
171	Cones	5	
172	Frustums	5	
173	Exact Trigonometric Values	5	
174	Introduction to Vectors	5	
181a	<i><u>Enlargement - Negative Scale Factor - Using Construction Lines</u></i>	6	
181b	<i><u>Enlargement - Negative Scale Factor - Using Column Vectors</u></i>	6	
182	<i><u>Combinations of Transformations</u></i>	6	
183	<i><u>Circle Theorems</u></i>	6	
184	<i><u>Proof of Circle Theorems</u></i>	6	
201	<i><u>Similarity - Area and Volume</u></i>	7	
202a	<i><u>The Sine Rule</u></i>	7	
202b	<i><u>The Cosine Rule</u></i>	7	
203	<i><u>Area of a Triangle Using Sine</u></i>	7	
217	<i><u>Pythagoras in 3D</u></i>	8 - 9	
218	<i><u>Trigonometry in 3D</u></i>	8 - 9	
219	<i><u>Vectors</u></i>	8 - 9	

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Geometry (Shape)

Clip No.	Title	Difficulty	Date complete
165	Loci	5	
166	Congruent triangles	5	
167	Sectors of a Circle	5	
168	Trigonometry	5	
169	Spheres	5	
170	Pyramids	5	
171	Cones	5	
172	Frustums	5	
173	Exact Trigonometric Values	5	
174	Introduction to Vectors	5	
181a	<u>Enlargement - Negative Scale Factor - Using Construction Lines</u>	6	
181b	<u>Enlargement - Negative Scale Factor - Using Column Vectors</u>	6	
182	<u>Combinations of Transformations</u>	6	
183	<u>Circle Theorems</u>	6	
184	<u>Proof of Circle Theorems</u>	6	
201	<u>Similarity - Area and Volume</u>	7	
202a	<u>The Sine Rule</u>	7	
202b	<u>The Cosine Rule</u>	7	
203	<u>Area of a Triangle Using Sine</u>	7	
217	<u>Pythagoras in 3D</u>	8 - 9	
218	<u>Trigonometry in 3D</u>	8 - 9	
219	<u>Vectors</u>	8 - 9	

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Week	Topics to revise (write in the topic name/ clip numbers that you're going to do that week.)			
w.c. 7 th October				
w.c. 14 th October				
w.c. 21 st October				
w.c. 28 th October (Half term)				
w.c. 4 th November				

Week	Topics to revise (write in the topic name/ clip numbers that you're going to do that week.)			
w.c. 11 th November				
w.c. 18 th November				
w.c. 25 th November				
w.c. 2 nd December	Mock Exams begin			