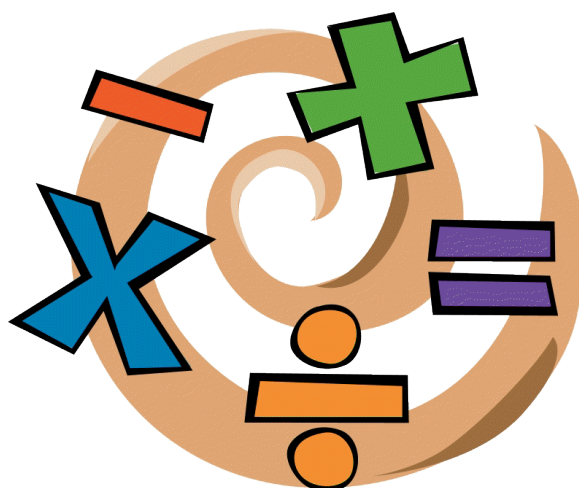


GCSE

# Mathematics

## Revision Guidance



Tudor  
Grange  
ACADEMY  
WORCESTER



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## Course Details.

The mathematics course that you are studying is with **Edexcel (GCSE 1-9)**.

The examination consists of 3 papers, each lasting 90 minutes and worth 80 marks. The first paper is a non-calculator paper and the second and third papers are both calculator papers. This means that your final maths score will be out of 240 marks.

## Exam Dates.

May 16th

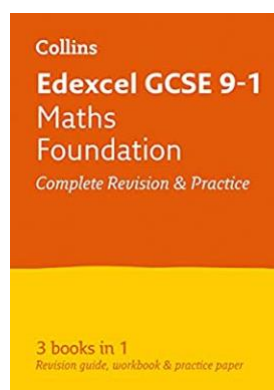
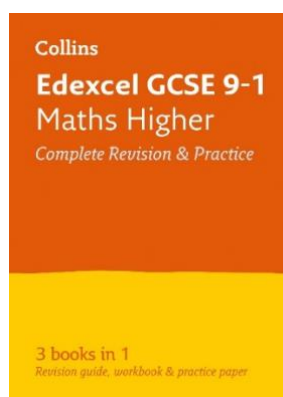
3rd June

10th June

Paper Title	Length/ Time	Marks	Worth
GCSE mathematics paper 1	90 minutes	80	1/3
GCSE mathematics paper 2	90 minutes	80	1/3
GCSE mathematics paper 3	90 minutes	80	1/3

## Textbooks and Revision Guides.

To support your revision you may wish to buy one of the following revision workbook and guides:



These can be purchased through parent portal for a cost of £5 for a workbook **and** a revision guide in one. This is significantly cheaper than purchasing them new online or on the high-street.

This year we have a new website to help support you with your revision, which is called Mathswatch. Mathswatch is an online resource giving you access to various tools to help you achieve your full potential in Mathematics. You will be able to access video tutorials which explain topics just like a teacher would. You can independently practise real exam style questions with instant feedback on your performance. Also you will complete assignments set by your class teacher with instant feedback for you and the teacher. The website address is **[vle.mathswatch.co.uk](http://vle.mathswatch.co.uk)** and please have a look on the school website for more information on Mathswatch.

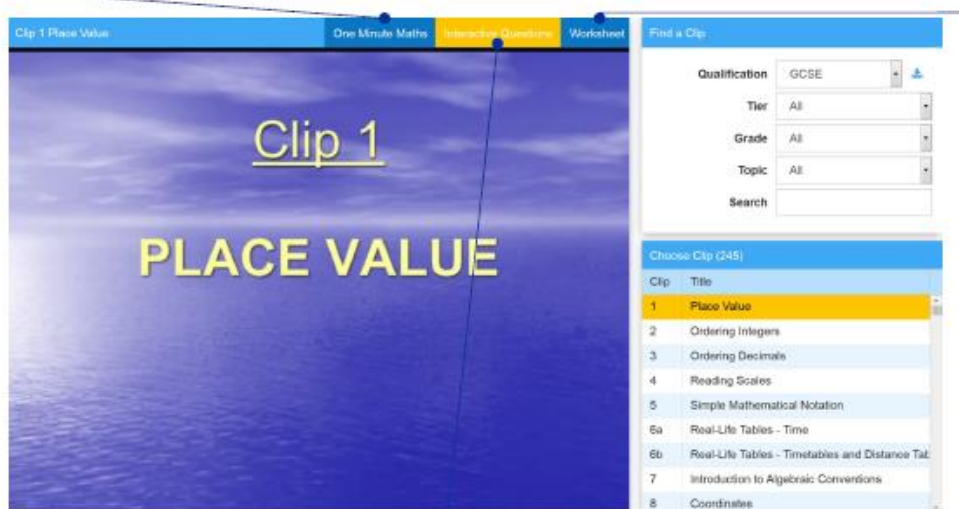
Below is an example of how they can use Mathswatch to revise.



## Working independently

The "Videos" section gives access to lessons covering your curriculum.

Each lesson comes in two versions (GCSE only). A full-length explanation video and a One-Minute version ideal for quick revision.



You also get access to a bank of interactive questions allowing you to test your newly acquired skills with real exam-type questions. With immediate feedback and the ability to even mark your working when needed, our system is the only one of its kind. You will get a realistic experience of what answering all types of exam questions is really like.

Please note that our marking bots have been programmed to attribute marks just like a human examiner would. If at any stage you feel that your answers aren't getting the correct amount of marks, please speak to your Maths teacher. They will either find what is missing/wrong in your answer or simply contact us to have it fixed.

Finally, as if this wasn't enough, you also have a PDF worksheet full of practice questions available. Most schools make the answers to these available on their own VLE. Alternatively, speak to your teacher and they will guide you on how best to use these extra questions.

## Tips and advice tutorials:

You will find in the "Extras" section help on how to input certain type of answers and on how to use our construction tools.

How to type powers

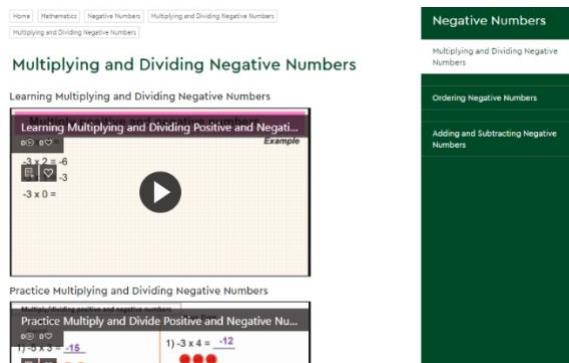
How to type fractions

How to type mixed numbers

How to use the construction tools

# Moodle

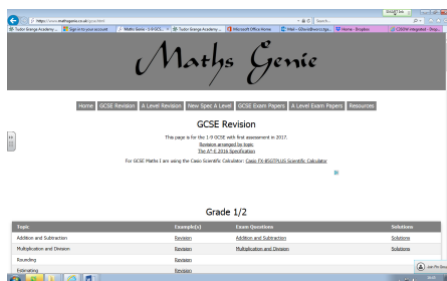
Log in to moodle (through the school website) and access the maths section – on here you will find teacher made videos which allow you to listen to an explanation of the topic and then try practise questions, which have teacher explained answers given as well.



## Other apps and Websites.

To support your revision you may also wish to use revision websites and/or apps. Below are some suggests for you.

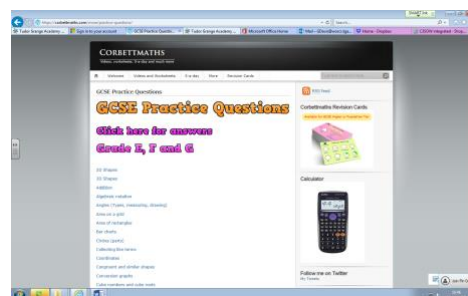
### For revision content:



**www.mathsgenie.co.uk**  
(Past papers online, videos and GCSE questions)

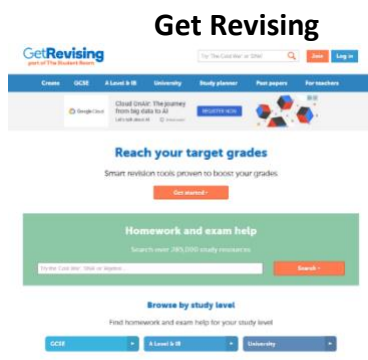


**www.mathedup.co.uk**  
(Online videos, GCSE questions with answers and quizzes with instant feedback)



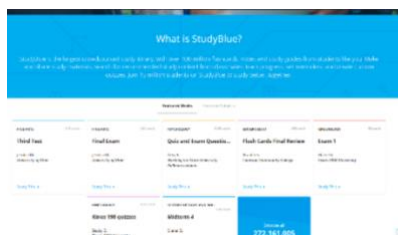
**www.corbettmaths.com**  
(Videos and GCSE questions, also 5 a day activities)

### For organising your revision:



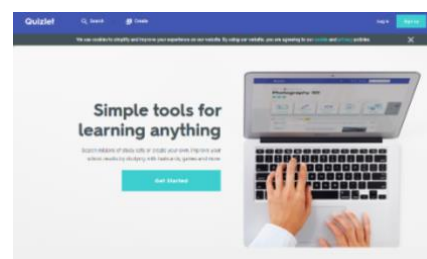
<https://getrevising.co.uk/>

### Study Blue



<https://www.studyblue.com/>

### Quizlet



<https://quizlet.com/en-gb>

# What do I need to revise (Higher tier)?

## HIGHER - Grades 4 – 9

### Algebra

I can do this	Grade	Title
	9	Approximate solutions to equations using iteration.
	9	Equation of a circle
	9	Equation of a tangent
	8	Algebra and Proof
	8	Gradients and area under a graph
	8	Graphs of trigonometric functions
	8	Quadratic equations (completing the square)
	7	Composite functions
	7	Expand the product of two or more binomials
	7	Factorising difficult quadratic expressions
	7	Geometric Sequences
	7	Graphs of exponential functions
	7	Quadratic equations (needing re-arrangement)
	7	Quadratic equations (quadratic formula)
	7	Real-life exponential graphs
	7	Represent quadratic inequalities
	7	Simultaneous equations (non-linear)
	7	Solve quadratic inequalities
	7	Translations and reflections of a function
	7	Turning points & completing the square
	6	Algebraic fractions
	6	Identifying parallel lines
	6	Inverse functions
	6	Linear inequalities in two variables
	6	$n$ th term of a quadratic sequence
	6	Quadratic equations (factorisation)

I can do this	Grade	Title
	6	Quadratic equations (graphical methods)
	6	Represent linear inequalities
	6	Simultaneous equations (linear)
	5	Algebraic argument
	5	Algebraic terminology
	5	Cubic and Reciprocal graphs
	5	Deduce quadratic roots algebraically
	5	Derive an equation
	5	Equation of a line
	5	Expand the product of two binomials
	5	Factorising quadratic expressions
	5	Fibonacci, quadratic and simple geometric sequences
	5	Graphical solution to equations
	5	Inequalities on number lines
	5	Linear equations
	5	Quadratic graphs
	5	Reciprocal real-life graphs
	5	Simplify indices
	5	Simplify surds
	5	Solve linear inequalities in one variable
	5	Writing formulae and expressions
	4	Changing the subject
	4	Collecting like terms
	4	Expressions
	4	Factorise single bracket
	4	Finding the equation of a line
	4	Graphs of linear functions
	4	Graphs of quadratic functions
	4	Linear equations one unknown
	4	Multiplying single brackets
	4	Non-standard real life graphs
	4	$n$ th term of a linear sequence
	4	Number machines
	4	Substitution
	4	Using " $y = mx + c$ "



## Geometry and Measures

I can do this	Grade	Title
	8	Circle theorems
	8	Vector arguments and proof
	7	Area of a triangle
	7	Cosine Rule
	7	Pythagoras and trig 2D and 3D
	7	Sine Rule
	6	Combined transformations
	6	Congruence and Similarity
	6	Standard trigonometric ratios
	5	Arc lengths and sectors
	5	Derive triangle results
	5	Enlargements and negative SF
	5	Loci
	5	Pythagoras
	5	Similarity and Congruence
	5	Standard constructions
	5	Surface Area
	5	Trigonometric ratios
	5	Volume
	4	Alternate and corresponding angles
	4	Area of a circle
	4	Areas of composite shapes
	4	Areas of triangles, trapezia and parallelograms
	4	Bearings
	4	Circle terminology
	4	Circumference of a circle
	4	Congruent triangles
	4	Enlargements and fractional SF
	4	Perimeter of 2D shapes
	4	Plans and elevations
	4	Polygons
	4	Solve geometrical problems
	4	Vector arithmetic
	4	Volume of prisms

## Statistics

I can do this	Grade	Title
	6	Boxplots
	6	Cumulative frequency
	6	Histograms with unequal class widths
	6	Quartiles and Interquartile Range
	5	Histograms with equal class widths
	5	Scatter graphs
	4	Comparing data using graphs
	4	Comparing Distributions
	4	Correlation
	4	Population
	4	Sampling
	4	Scatter Diagrams
	4	Time series

## Probability

I can do this	Grade	Title
	7	Conditional Probability
	5	Probability of dependent events
	5	Probability of independent events
	4	Mutually exclusive sum
	4	Relative Frequency
	4	Tables and Grids
	4	Theoretical Probability
	4	Unbiased Samples
	4	Venn Diagrams

## Number

I can do this	Grade	Title
	8	Surds
	7	Index Laws (negative and fractional)
	7	Product rule
	7	Recurring Decimals
	7	Upper and lower bounds
	6	Finance 1
	6	Powers and Roots
	6	Product of prime factors
	6	Using Pi
	5	Calculating with fractions
	5	Error intervals
	5	Index Laws
	5	Limits of accuracy
	4	Adding and subtracting fractions
	4	Checking calculations
	4	Compound measures
	4	Converting metric units
	4	Estimation
	4	Fractions and percentages
	4	Fractions and ratio problems
	4	Interpret calculator displays
	4	LCM and HCF
	4	Multiples and factors
	4	Multiplying fractions
	4	Operations
	4	Order of operations
	4	Powers
	4	Rounding
	4	Standard Form
	4	Terminating decimals and fractions

## Ratio, Proportion and rates of change

I can do this	Grade	Title
	9	Gradients and the rate of change
	7	General iterative processes
	6	Direct and inverse proportion
	5	Compound Units
	5	Gradient & the rate of change
	5	Growth and decay
	5	Interpret Proportion
	5	Percentage change
	5	Problems with compound units
	5	Scale factors and similarity
	5	Simple Interest and Financial Maths
	5	Solve Proportion Problems
	4	Compare Fractions, Decimals and Percentages
	4	Compare lengths, area, volume
	4	Comparing quantities as a ratio
	4	Division of a quantity as a ratio
	4	Express one quantity as a % of another
	4	Percentage change
	4	Problems involving ratio
	4	Proportion and ratio
	4	Ratio and fractions
	4	Ratio Sharing



# What do I need to revise (Foundation tier)?

## FOUNDATION - Grades 1 - 5

### Geometry and Measures

I can do this	Grade	Title
	5	Arc lengths and sectors
	5	Derive triangle results
	5	Enlargements and negative SF
	5	Loci
	5	Pythagoras
	5	Similarity and Congruence
	5	Standard constructions
	5	Surface Area
	5	Trigonometric ratios
	5	Volume
	4	Alternate and corresponding angles
	4	Area of a circle
	4	Areas of composite shapes
	4	Areas of triangles, trapezia and parallelograms
	4	Bearings
	4	Circle terminology
	4	Circumference of a circle
	4	Congruent triangles
	4	Enlargements and fractional SF
	4	Perimeter of 2D shapes
	4	Plans and elevations
	4	Polygons
	4	Solve geometrical problems
	4	Vector arithmetic
	4	Volume of prisms
	3	3-D Shapes
	3	Congruent and similar shapes
	3	Geometrical terminology and diagrams
	3	Measuring lines and angles
	3	Properties of quadrilaterals
	3	Properties of triangles
	3	Translations and vectors
	3	Using standard units

## Algebra

I can do this	Grade	Title
	5	Algebraic terminology
	5	Cubic and Reciprocal graphs
	5	Deduce quadratic roots algebraically
	5	Derive an equation
	5	Equation of a line
	5	Expand the product of two binomials
	5	Factorising quadratic expressions
	5	Fibonacci, quadratic and simple geometric sequences
	5	Graphical solution to equations
	5	Inequalities on number lines
	5	Linear equations
	5	Quadratic graphs
	5	Reciprocal real-life graphs
	5	Simplify indices
	5	Simplify surds
	5	Solve linear inequalities in one variable
	5	Writing formulae and expressions
	4	Changing the subject
	4	Collecting like terms
	4	Expressions
	4	Factorise single bracket
	4	Finding the equation of a line
	4	Graphs of linear functions
	4	Graphs of quadratic functions
	4	Linear equations one unknown
	4	Multiplying single brackets
	4	Non-standard real life graphs
	4	$n$ th term of a linear sequence
	4	Number machines
	4	Substitution
	4	Using " $y = mx + c$ "
	3	Coordinates in four quadrants
	3	Plotting straight line graphs
	3	Position to term rules
	3	Sequences of square, triangular and cube numbers
	3	Using Formulae
	2	Sequences and Rules

## Statistics

I can do this	Grade	Title
	5	Histograms with equal class widths
	5	Scatter graphs
	4	Comparing data using graphs
	4	Comparing Distributions
	4	Correlation
	4	Population
	4	Sampling
	4	Scatter Diagrams
	4	Time series
	3	Charts and Diagrams
	3	Pie Charts
	3	Types of data
	3	Vertical Line Charts

## Ratio, Proportion and rates of change

I can do this	Grade	Title
	5	Compound Units
	5	Gradient & the rate of change
	5	Growth and decay
	5	Interpret Proportion
	5	Percentage change
	5	Problems with compound units
	5	Scale factors and similarity
	5	Simple Interest and Financial Maths
	5	Solve Proportion Problems
	4	Compare Fractions, Decimals and Percentages
	4	Compare lengths, area, volume
	4	Comparing quantities as a ratio
	4	Division of a quantity as a ratio
	4	Express one quantity as a % of another
	4	Percentage change
	4	Problems involving ratio
	4	Proportion and ratio
	4	Ratio and fractions
	4	Ratio Sharing
	3	Convert standard units
	3	Express one quantity as a fraction of another
	3	Use ratio notation
	3	Use scale factors, diagrams and maps

## Number

I can do this	Grade	Title
	5	Calculating with fractions
	5	Error intervals
	5	Index Laws
	5	Limits of accuracy
	4	Adding and subtracting fractions
	4	Checking calculations
	4	Compound measures
	4	Converting metric units
	4	Estimation
	4	Fractions and percentages
	4	Fractions and ratio problems
	4	Interpret calculator displays
	4	LCM and HCF
	4	Multiples and factors
	4	Multiplying fractions
	4	Operations
	4	Order of operations
	4	Powers
	4	Rounding
	4	Standard Form
	4	Terminating decimals and fractions
	3	Decimals
	3	Listing outcomes
	3	Prime numbers
	3	Using standard units
	2	Add and Subtract integers
	2	Dividing integers
	2	Multiplying integers
	2	Ordering numbers
	2	Place value

## Probability

I can do this	Grade	Title
	5	Probability of dependent events
	5	Probability of independent events
	4	Mutually exclusive sum
	4	Relative Frequency
	4	Tables and Grids
	4	Theoretical Probability
	4	Unbiased Samples
	4	Venn Diagrams
	3	Frequency Trees
	3	Probability of equally likely outcomes

## **Support available in school.**

Mathematics revision sessions take place afterschool on Monday (B105 foundation, B106 higher)

Each group is following a bespoke scheme of work which has been developed to address areas of weakness shown in mock examinations.

Homework will be set each week through 'Satchel One' and this will also give an indication of which topics students should be revising at home.