EZY MATHS

FOR STUDENTS STUDYING FOR EXAMINATIONS BY THE **AQA, EDEXCEL AND OCR** EXAM BOARDS

GCSE COURSE GUIDE

EzyMaths has been created from the very beginning to support the new 9-1 mathematics specifications and provides full content coverage.

Developed by EZY EDUCATION

OUR MODEL

COMPREHENSIVE REPORTING

All student activity is recorded and teachers have access to enlightening reports which outline activity and attainment levels.

LECTURE VIDEOS

Each unit begins with a visual and dynamic video, explaining the key concepts and illustrative examples

FEEDBACK CYCLES

Every one of our 5,000 questions has a bespoke feedback video which provides an opportunity to witness a worked solution before moving on to the next question.

AUTOMATED ASSESSMENTS

Each unit contains at least one assessment (usually 2 or 3). Questions are presented in a wide variety of formats and are all automatically marked.

WHEN CREATING EZYMATHS, WE WANTED EVERY VIDEO AND ASSESSMENT TO ADHERE TO 4 KEY PRINCIPLES:

1. **COMPREHENSIVE**
Whatever topic you are teaching, EzyMaths has it covered... in depth!

2. **INTERACTIVE**
We believe in the power of formative assessment. Each assessment begins with a series of scaffolded questions.

3. **ENGAGING**
Our resources are uber-visual, dynamic and delivered by a team passionate about GCSE Maths.

4. **TEACHER-CENTRIC**
EzyMaths is designed to support all forms of teaching – with teachers driving and monitoring student activity.

POTENTIAL USES

EzyMaths is designed to put teachers in charge and be used to support a wide variety of approaches. Here are just some examples:

AUTOMATED ASSESSMENTS

With over 380 assessments, covering the entire course, you can set plenty of work every week as you teach the syllabus.

FLIPPED LEARNING

Use EzyMaths to support flipped classrooms and blended learning. Know for sure whether or not students have completed their preparations.

MONITORING & INTERVENTION

Use our comprehensive reports to monitor student completion and identify problem areas to focus on in class.

PARENTS' EVENINGS

Print off our automated reports and hand them out at Parents' Evenings. Easy to evidence student effort and attainment levels.

REVISION TOOL

EzyMaths is the ideal revision tool. When exams approach, students have 24/7 access to resources covering every single topic in depth.

SECTION

NUMBER

N1	Numbers
N2	Fractions and Decimals
N3	Calculation
N4	Calculation using Fractions
N5	Factors and Multiples
N6	Powers and Surds
N7	Rounding, Bounds and Estimation
N8	Standard Form
N9	Units

Module 1 - Numbers

- **N1.1** Types of number
- **N1.2** Place value
- **N1.3** Number lines

Module 2 - Fractions & Decimals

- **N2.1** Introduction to fractions
- **N2.2** Simplifying fractions
- **N2.3** Improper fractions and mixed numbers
- **N2.4** Decimals to fractions
- **N2.5** Fractions to decimals
- **N2.6** Ordering fractions and decimals
- **N2.7** Converting recurring decimals

Module 3 - Calculation

- **N3.1** Addition and subtraction
- **N3.2** Multiplication
- **N3.3** Division
- **N3.4** BIDMAS

Module 4 - Calculation Using Fractions

- **N4.1** Adding fractions
- **N4.2** Subtracting fractions
- **N4.3** Multiplying fractions
- **N 4.4** Dividing fractions

Module 5 - Factors & Multiples

- **N5.1** Prime numbers
- **N5.2** Factors
- **N5 3** Unique Factorisation Theorem
- **N5.4** Highest common factor
- **N5.5** Multiples
- **N5.6** Lowest common multiple

Module 6 - Powers & Surds

- **N6.1** Positive powers
- **N6.2** Negative powers
- **N6.3** Roots
- **N6.4** Powers of 10
- **N6.5** Fractional powers
- **N6.6** Simplifying surds
- **N6.7** Rationalising denominators

Module 7 - Rounding, Bounds & Estimation

- **N7.1** Place value rounding
- **N7.2** Decimal places
- **N7.3** Significant figures
- **N7.4** Error intervals
- **N7.5** Limits of accuracy problems
- **N7.6** Using approximation to estimate

Module 8 - Standard Form

- **N8.1** Introduction to Standard Form (SF)
- **N8.2** SF with positive powers
- **N8.3** SF with negative powers
- **N8.4** Adding and subtracting SF
- **N8.5** Multiplying and dividing SF
- **N8.6** SF problems

Module 9 - Units

- **N9.1** Using units
- **N9.2** Mass
- **N9.3** Length
- **N9.4** Area and volume
- **N9.5** Time
- **N9.6** Money

Each unit contains a lecture video and at least 1 (usually 2 or 3) assessments.

SECTION
ALGEBRA

A1	Formulae
A2	Algebraic Manipulation
A3	Linear Equations
A4	Quadratic Equations
A5	Simultaneous Equations
A6	Inequalities
A7	Functions
A8	Sequences

Module 1 - Formulae

A1.1	Algebraic notation
A1.2	Introduction to formulae
A1.3	Using formulae
A1.4	Changing the subject of the formula

Module 2 - Algebraic Manipulation

A2.1	Collecting like terms
A2.2	Basic laws of indices
A2.3	Advanced laws of indices
A2.4	Multiplying over a single bracket
A2.5	Expanding brackets
A2.6	Taking out common factors
A2.7	Algebraic fractions

Module 3 - Linear Equations

A3.1	Introduction
A3.2	Basic linear equations
A3.3	Advanced linear equations

Module 4 - Quadratic Equations

A4.1	Introduction
A4.2	Factorising a=1 quadratics
A4.3	Factorising a≠1 quadratics
A4.4	Difference of two squares
A4.5	Solving QEs by factorising
A4.6	The quadratic formula
A4.7	Completing the square
A4.8	Solving QEs by completing the square

Module 5 - Simultaneous Equations

A5.1	Introduction
A5.2	Linear SEs
A5.3	Quadratic SEs

Module 6 - Inequalities

A6.1	Inequality symbols
A6.2	Inequality number lines
A6.3	Solving linear inequalities
A6.4	Solving quadratic inequalities
A6.5	Two-variable linear inequalities

Module 7 - Functions

A7.1	Introduction
A7.2	Using functions
A7.3	Inverse functions
A7.4	Composite functions

Module 8 - Sequences

A8.1	Introduction
A8.2	Arithmetic progressions
A8.3	Advanced sequences
A8.4	Finding nth term of quadratic sequences
A8.5	Sequence problems

SECTION
GRAPHS

GR1	Coordinates
GR2	Linear Graphs
GR3	Quadratic and Cubic Graphs
GR4	Advanced Graphs
GR5	Using Graphs
GR6	Contextual Graphs

Module 1 - Coordinates

GR1.1	Plotting coordinates
GR1.2	Plotting shapes using coordinates

Module 2 - Linear Graphs

GR2.1	Basic graphs
GR2.2	Equation of a straight line
GR2.3	Straight line equations from coordinates
GR2.4	Midpoints
GR2.5	Parallel lines
GR2.6	Perpendicular lines

Module 3 - Quadratic and Cubic Graphs

GR3.1	Quadratic graphs
GR3.2	Cubic graphs
GR3.3	Max and min points

Module 4 - Advanced Graphs

GR4.1	Reciprocal and exponential graphs
GR4.2	Trigonometric graphs
GR4.3	Equation of a circle

Module 5 - Using Graphs

GR5.1	Translations and reflections
GR5.2	Using graphs to find solutions
GR5.3	Estimating gradients and areas

Module 6 - Contextual Graphs

GR6.1	Distance-time graphs
GR6.2	Velocity-time graphs
GR6.3	Financial graphs

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SECTION

RATIO, PROPORTION AND RATES OF CHANGE

RPR1	Ratio
RPR2	Percentages
RPR3	Proportion
RPR4	Rates of Change

SECTION

GEOMETRY

GE1	Shapes
GE2	Angles
GE3	Construction and Measurement
GE4	Trigonometry
GE5	Mensuration
GE6	Circles
GE7	Congruence
GE8	Transformations
GE9	Vectors

Module 1 - Ratio

RPR1.1	Introduction
RPR1.2	Dividing quantities using ratios
RPR1.3	Map scale factors
RPR1.4	Quantities as fractions of each other

Module 2 - Percentages

RPR2.1	Introduction
RPR2.2	Quantity as a percentage of another
RPR2.3	Percentage increases
RPR2.4	Percentage decreases
RPR2.5	Reverse percentage changes
RPR2.6	Simple interest
RPR2.7	Compound growth and decay

Module 3 - Proportion

RPR3.1	Introduction
RPR3.2	Direct proportion
RPR3.3	Inverse proportion
RPR3.4	Graphical representations of proportion

Module 4 - Rates of Change

RPR4.1	Introduction
RPR4.2	Interpreting gradients
RPR4.3	Average and instantaneous rates of change

Module 1 - Shapes

GE1.1	Quadrilaterals
GE1.2	Triangles
GE1.3	Polygons
GE1.4	3D shapes

Module 2 - Angles

GE2.1	Angle notation and conventions
GE2.2	Angles at a point and on a straight line
GE2.3	Vertically opposite angles
GE2.4	Corresponding, alternate and co-interior angles
GE2.5	Angles in a triangle
GE2.6	Angles in an isosceles triangle
GE2.7	Angles in a polygon
GE2.8	Bearings

Module 3 - Construction and Measurement

GE3.1	Measuring Lines and Angles
GE3.2	Constructing Bisectors
GE3.3	Loci and Regions

Module 4 - Trigonometry

GE4.1	Pythagoras' Theorem
GE4.2	Sine function
GE4.3	Cosine function
GE4.4	Tangent function
GE4.5	SohCahToa
GE4.6	Sine rule
GE4.7	Cosine rule
GE4.8	Problems in 3-D

Module 5 - Mensuration

GE5.1	Perimeters
GE5.2	Rectangular areas
GE5.3	Area of a triangle
GE5.4	A=0.5absinC
GE5.5	Parallelograms and trapezia
GE5.6	Volumes of prisms
GE5.7	Volumes of spheres, pyramids and cones
GE5.8	Advanced area and volume calculations

Module 6 - Circles

GE6.1	Circle definitions
GE6.2	Circumference of a circle
GE6.3	Area of a circle
GE6.4	Sectors and arc lengths of circles
GE6.5	Circle theorems 1
GE6.6	Circle theorems 2
GE6.7	Circle theorems extension

Module 7 - Congruence

GE7.1	Similarity in one dimension
GE7.2	Similarity in more than one dimension
GE7.3	Congruence
GE7.4	Congruence criteria for triangles

Module 8 - Transformations

GE8.1	Reflection
GE8.2	Rotation
GE8.3	Translation
GE8.4	Enlargement
GE8.5	Compound transformations

Module 9 - Vectors

GE9.1	The concept of a vector
GE9.2	Addition and subtraction of vectors
GE9.3	Multiplying vectors by a scalar
GE9.4	Constructing geometric proofs with vectors

Each unit contains a lecture video and at least 1 (usually 2 or 3) assessments.

SECTION

PROBABILITY AND STATISTICS

PS1	Probability
PS2	Data and Frequency
PS3	Descriptive Statistics
PS4	Cumulative Frequency
PS5	Data Representations
PS6	Correlation

Module 1 - Probability	
PS1.1	Introduction
PS1.2	Counting outcomes
PS1.3	Calculating probability
PS1.4	Mutually exclusive events
PS1.5	Calculating expected outcomes
PS1.6	Venn diagrams
PS1.7	Probability trees
PS1.8	Dependent events

Module 2 - Data and Frequency	
PS2.1	Types of data
PS2.2	Sampling
PS2.3	Frequency tables
PS2.4	2-way frequency tables

Module 3 - Descriptive Statistics	
PS3.1	Summary statistics
PS3.2	Calculating the mean
PS3.3	Calculating the median
PS3.4	Calculating the mode
PS3.5	Averages from frequency tables
PS3.6	Averages from grouped frequency tables
PS3.7	Range
PS3.8	Descriptive statistics problems

Module 4 - Cumulative Frequency	
PS4.1	Cumulative frequency tables
PS4.2	Cumulative frequency graphs
PS4.3	Quartiles and IQR
PS4.4	Box plots

Module 5 - Data Representations	
PS5.1	Bar charts
PS5.2	Pie charts
PS5.3	Pictograms
PS5.4	Line charts
PS5.5	Histograms

Module 6 - Correlation	
PS6.1	Scatter graphs
PS6.2	Correlation
PS6.3	Lines of best fit and predictions
PS6.4	Limits of correlation

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ABOUT US

With a wealth of real-life teaching experience, the EzyMaths team are passionate about helping teachers improve student grades through the use of technology.

PETER JORDAN

Peter Jordan founded EzyEducation after becoming frustrated at the lack of meaningful digital learning aids available whilst teaching economics at The Portsmouth Grammar School. Before entering the classroom, Peter had several senior marketing roles within the financial services sector, including at Old Mutual Wealth and Scottish Widows.

MATT HAWES

Matt Hawes is the EzyMaths course leader. Matt has over 10 years' experience teaching maths in both the state and independent sectors and was a keen advocate of the flipped classroom model. His teaching and flipped learning experience have been incorporated into the EzyMaths course.

DR MICHAEL McCALL

Dr Michael McCall has a wealth of academic and teaching experience, having read mathematics at Cambridge University, received a PhD from the University of Durham and then spent his subsequent career teaching Maths. Michael spent over 15 years as the head of maths at The Portsmouth Grammar School and oversees the development of the EzyMaths resources.

Our excellent support team are on-hand to support you and will make setting up and using EzyMaths a breeze.

Email us at **info@ezyeducation.co.uk** or give us a call on **01329 285415.**

EZY EDUCATION

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