MATHSWATCH COVERS EVERY TOPIC ON THE GCSE (Double Award) SYLLABUS

Grades that will be examined:

Higher	G	F	E	D	C	B	A	A*
Foundation	G	F	E	D	C			

Grades that can be obtained:

Higher				D	C	B	A	A*
Foundation	G	F	E	D	C			

Unit 3

Calculator paper

Calculator allowed...40% of qualification

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Grade G

Integers and Even/Odd Numbers 1
Place Value 2
Rounding to the Nearest 10, 100, 1000 . . 3
Ordering Integers 4
Mathematical Notation - Introduction 5
Names of Angles 6
Polygons 7
Reading Scales 8
Congruent and Similar Shapes 9
Tally Charts and Bar Charts 10
Pictograms 11

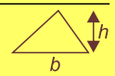
Grade F

Fractions - Introduction 15
Inverse Operations 16
Add and Subtract (Integers and Decimals) . 17
Multiply and Divide (Integers) 18
Multiply and Divide by Powers of 10 19
Negatives in Real Life 20
Interpreting Real-Life Tables 21a
Algebraic Conventions - Introduction . . . 22
Simple Geometric Definitions 24
Properties of Solids 25
Data - Discrete and Continuous 27
Vertical Line Charts 28

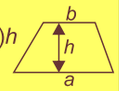
Grade E

Rounding to Decimal Places 29
Half-Way Values 30
Powers/Indices - Introduction 31
Working With Fractions 32
Percentages - Introduction 33
Multiply and Divide (Decimals) 34
BODMAS/BIDMAS 35
Algebraic Simplification (Add/Subtract) . 37
Nets 39
Measuring and Drawing Angles 40
Drawing a Triangle Using a Protractor . . 41
Perimeters 42
Area of a Rectangle 43
Circle Definitions 44

Area of a triangle = $\frac{b \times h}{2}$



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



Prime Numbers

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, . . .

Each prime number has exactly two factors.

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Grade D

Rounding to Significant Figures . . . 49a/b/d
Squares, Cubes and Roots 50
Product of Primes 52
Decimals and Fractions 53
Fractions, Percentages, Decimals 54
Percentage of an Amount 55a
Change to a Percentage 56a
Four Rules of Negatives 57
Four Rules of Fractions 58
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Money Questions 62b
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Substitution 66
Solving Equations - Introduction 67
Tangents, Arcs, Sectors and Segments . 72
Constructions 73
Angles on a Line and at a Point 74
Angles and Parallel Lines 75
Angles in a Triangle 76
Angles in a Quadrilateral 77
Unit Conversions 78a
Area of a Triangle 79
Area of a Parallelogram 80
Area of a Trapezium 81
Surface Area of a Cuboid 82
Volume of a Cuboid 83
Questionnaires 89
Frequency Tables and Diagrams 91
Scatter Diagrams 92
Averages and the Range 93

Addition/Subtraction

(+ +) becomes +
(– –) becomes +
(+ –) becomes –
(– +) becomes –

eg. 5 – (-3) = 5 + 3

eg. 5 + (-3) = 5 – 3

Multiplication/Division

(+) × (+) becomes +
(–) × (–) becomes +
(+) × (–) becomes –
(–) × (+) becomes –

eg. (-5) × (-3) = 15

eg. (-5) × 3 = -15

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Grade C

Reciprocals 97
Percentage Change 103
Increase/Decrease by a Percentage . . 104
Expanding and Simplifying Brackets . . 107
Solving Equations - Advanced 108
Rearranging Simple Formulae 109
Forming Formulae and Equations 110
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Recognising and Sketching Functions . 119
Index Notation 120
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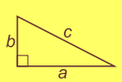
Geometric Properties of Quadrilaterals 124
Compound Measures 126
Area of a Circle 127
Circumference of a Circle 128
Surface Area of a Prism 129
Volume of a Prism 130
Pythagoras' Theorem 131
Bearings 134
Sampling Populations 136
Pie Charts 137
Averages From a Table 138
Data Distribution 139

Pythagoras



$a^2 + b^2 = c^2$

Area of a circle = πr^2

Circumference of a circle = $2\pi r$

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Grade B

Negative Indices 141
Standard Form 142
Identities 147
Expanding and Simplifying - Advanced 154
Similar Shapes 156
Pythagoras' Theorem - Advanced 157
Trigonometry 158
Sectors of a Circle 159
Data Distribution - Advanced 164

Quadratic Formula

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

Grade A/A*

Surds 170a/b
Direct and Inverse Proportion 171
Solving Quadratics with the Formula . . 173
Algebraic Fractions - Advanced 176
Interpreting Time Graphs 179
Spheres 180
Pyramids 181
Cones and Frustums 182
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Pythagoras in 3D 184
Trigonometry in 3D 185
Trigonometric Graphs 186
Similarity - Area and Volume 187
Congruent Triangles 188
Histograms 190

Trigonometry