

Subject Content

- Number
- Algebra
- Ratio, Proportion, Rates of Change
- Geometry and Measures
- Probability and Statistics

Grades that will be examined:

Higher	1	2	3	4	5	6	7	8	9
Foundation	1	2	3	4	5				

You will find some formulas and information in this insert.

It will be very helpful to learn it all, off-by-heart for your exam.

Area of a circle = πr^2
Circumference of a circle = $2\pi r$



Grade 1

- Place Value 1
- Ordering Integers 2
- Ordering Decimals 3
- Reading Scales 4
- Simple Mathematical Notation 5
- Interpreting Real-Life Tables 6
- Introduction to Algebraic Conventions 7
- Coordinates 8
- Simple Geometric Definitions 9
- Polygons 10
- Symmetries 11
- Tessellations and Congruent Shapes 12
- Names of Angles 13
- The Probability Scale 14
- Tally Charts and Bar Charts 15
- Pictograms 16

Addition/Subtraction

(+) becomes + eg. $5 - (-3) = 5 + 3$

(-) becomes +

(-) becomes - eg. $5 + (-3) = 5 - 3$

(-) becomes -

(-) becomes -

Multiplication/Division

(+) × (+) becomes + eg. $(-5) × (-3) = 15$

(-) × (-) becomes +

(+) × (-) becomes -

(-) × (+) becomes - eg. $(-5) × 3 = -15$

Grade 2

- Adding Integers and Decimals 17
- Subtracting Integers and Decimals 18
- Multiplying Integers 19
- Dividing Integers 20
- Inverse Operations 21
- Money Questions 22
- Negatives in Real Life 23
- Introduction to Fractions 24
- Equivalent Fractions 25
- Simplifying Fractions 26
- Half-Way Values 27
- Factors, Multiples and Primes 28
- Introduction to Powers/Indices 29
- Multiply and Divide by Powers of 10 30
- Rounding to the Nearest 10, 100 etc 31
- Rounding to Decimal Places 32
- Simplifying - Addition and Subtraction 33
- Simplifying - Multiplication 34
- Simplifying - Division 35
- Function Machines 36
- Generating a Sequence - Term to Term 37
- Introduction to Ratio 38
- Using Ratio for Recipe Questions 39
- Introduction to Percentages 40
- Value for Money 41
- Introduction to Proportion 42

Prime Numbers

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

Each prime number has exactly two factors.

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

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

Grade 3

- Multiplying Decimals 66
- Dividing Decimals 67
- Four Rules of Negatives 68
- Listing Strategies 69
- Comparing Fractions 70
- Adding and Subtracting Fractions 71
- Finding a Fraction of an Amount 72
- Multiplying Fractions 73
- Dividing Fractions 74
- BODMAS/BIDMAS 75
- Reciprocals 76
- Calculator Questions 77
- Product of Primes 78
- Highest Common Factor (HCF) 79
- Lowest Common Multiple (LCM) 80
- Squares, Cubes and Roots 81
- Working with Indices 82
- Standard Form 83
- Decimals and Fractions 84
- Fractions, Percentages, Decimals 85
- Percentage of an Amount (Calc.) 86
- Percentage of an Amount (Non-Calc.) 87
- Change to a Percentage (Calc.) 88
- Change to a Percentage (Non-Calc.) 89
- Rounding to Significant Figures 90
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- Using Place Value 92
- Expanding Brackets 93
- Simple Factorisation 94
- Substitution 95
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- The Gradient of a Line 97
- Drawing Quadratic Graphs 98
- Sketching Functions 99
- Solving Equations Using Flowcharts 100
- Subject of a Formula Using Flowcharts 101
- Generate a Sequence from nth Term 102
- Finding the nth Term 103
- Special Sequences 104
- Exchanging Money 105
- Sharing Using Ratio 106
- Ratios, Fractions and Graphs 107
- Increase/Decrease by a Percentage 108
- Percentage Change 109
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- Metric Conversions 112
- Problems on Coordinate Axes 113
- Surface Area of a Prism 114
- Volume of a Cuboid 115
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- Area of a Circle 117
- Circumference of a Circle 118
- Volume of a Prism 119
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- Angles in a Triangle 121
- Properties of Special Triangles 122
- Angle Sum of Polygons 123
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- Expanding and Simplifying Brackets 134
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- Rearranging Simple Formulae 136
- Forming Formulae and Equations 137
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- Solving Linear Inequalities 139
- Simultaneous Equations Graphically 140
- Fibonacci Sequences 141
- Compound Units 142
- Distance-Time Graphs 143
- Similar Shapes 144
- Bisecting an Angle 145
- Constructing Perpendiculars 146
- Drawing a Triangle Using Compasses 147
- Enlargements 148
- Tangents, Arcs, Sectors and Segments 149
- Pythagoras' Theorem 150
- Simple Tree Diagrams 151
- Sampling Populations 152
- Time Series 153

The Laws of Indices

$x^a \times x^b = x^{a+b}$

$x^a \div x^b = x^{a-b}$

$(x^a)^b = x^{ab}$

$x^{-a} = \frac{1}{x^a}$

Pythagoras

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

Grade 5

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- Mathematical Reasoning 156
- Factorising and Solving Quadratics 157
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- Finding the Equation of a Straight Line 159
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- Simultaneous Equations Algebraically 162
- Geometric Progressions 163
- Compound Interest and Depreciation 164
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- Sectors of a Circle 167
- Trigonometry 168
- Spheres 169
- Pyramids 170
- Cones 171
- Frustums 172
- Exact Trigonometric Values 173
- Introduction to Vectors 174
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Trigonometry

Sin H, Cos H, Tan A

Grade 6

- Recurring Decimals to Fractions 177
- Product of Three Binomials 178
- Iteration - Trial and Improvement 179
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- Solving Quadratics with the Formula 191
- Factorising Hard Quadratics 192
- Algebraic Proof 193
- Exponential Functions 194
- Trigonometric Graphs 195
- Transformation of Functions 196
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- Similarity - Area and Volume 200
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- Completing the Square 209
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- Finding the nth Term of a Quadratic 213
- Inverse Functions 214
- Composite Functions 215
- Velocity-Time Graphs 216
- Pythagoras in 3D 217
- Trigonometry in 3D 218
- Vectors 219

Fractional Indices	Surds
$x^{\frac{a}{b}} = (\sqrt[b]{x})^a$	$\sqrt{a} \times \sqrt{a} = a$
	$\sqrt{a \times b} = \sqrt{a} \times \sqrt{b}$
Quadratic Formula	$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	
Sine Rule	Histograms
$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$	frequency density
Cosine Rule	$= \frac{\text{frequency}}{\text{class width}}$
$a^2 = b^2 + c^2 - 2bc \cos A$	

MATHSWATCH COVERS EVERY TOPIC ON THE 2015 SYLLABUS

Grades that will be examined: Grades that can be obtained:

Higher	1	2	3	4	5	6	7	8	9	Higher	4	5	6	7	8	9
Foundation	1	2	3	4	5					Foundation	1	2	3	4	5	

The Maths Grade 1 to 9 syllabus is split into 5 areas and 240 videos.

- Number - 65 videos
- Algebra - 64 videos
- Ratio and Proportion - 17 videos
- Geometry and Measures - 66 videos
- Probability and Statistics - 28 videos

How long will it take to revise?

The timings of our videos are:

- 0 to 5 mins 103 videos
- 5 to 10 mins 110 videos
- 10 to 15 mins 22 videos
- 15 to 20 mins 4 videos
- 20 to 25 mins 1 video