

# National 5 Mathematics Topic List

## Unit 1 - Expressions and Formulae

*For help with any of these topics get in touch [here](#)*

Decimal Places

Significant Figures

Scientific Notation

Rational and Irrational Numbers

Surds

Rationalising Fractions

Rules of Indices

How Powers and Roots Relate

Algebraic Expressions

Simplifying Algebraic Expressions

Expanding Brackets

Factorising

Factorising Using a Common Factor

Factorising a Trinomial

A Difference of Two Squares

Completing the Square

Algebraic Fractions

Straight Line Graphs

The Gradient of a Straight Line

The Equation of a Straight Line Graph

Straight Lines not in Standard Form

Length of an Arc

Area of a Sector

Volume of a Cuboid

Volume of a Prism

Volume of Cones, Pyramids and Spheres

## Unit 2 - Relationships

*For help with any of these topics get in touch [here](#)*

Linear Equations

Equations with Brackets

Equations with Fractions

Inequations

Inequations: Multiplying or Dividing by a Negative Number

Simultaneous Equations

Solving by Elimination of a Variable

Changing the Subject of the Formula

Quadratic Functions

Graphs of Quadratic Functions

Roots of Quadratic Functions

Using the Discriminant to Determine the Number of Roots

Turning Points of Graphs of Quadratic Functions

Y-Intercept of Quadratic Functions

The Shape of the Graph of a Quadratic Function

Transforming the Graph of a Quadratic Function

Quadratic Equations

Pythagoras' Theorem

Converse of Pythagoras' Theorem

The Properties of Shapes

Similar Figures

Trigonometric Functions

Transforming Graphs of Trigonometric Functions

The CAST Method

Trigonometric Equations

## Unit 3 - Applications

*For help with any of these topics get in touch [here](#)*

The Sine Rule

The Cosine Rule

Problems Involving Bearings

Area of a Non-Right Triangle

Vectors

Vector Notation

Component Form of a Vector

Vectors in 3-dimensions

Vectors and Scalars

Magnitude of a Vector

Resultant Vectors

Compound Interest

Appreciation & Depreciation

Working with Fractions

Adding and Subtracting Fractions

Multiplying and Dividing Fractions

Fractions of a Number

Comparing Distributions

Mean and Median

Quartiles

Interquartile Range

Semi-Interquartile Range

Box Plots

Standard Deviation

Scatter Graphs

Line of Best Fit