

Maths A Level

Transition Materials: Year 11 - 12

A Level Maths is a significant step up from GCSE. The suggestions in this booklet will help you develop the algebraic fluency, problem-solving skills and mathematical confidence needed for a successful start in Year 12.

Core GCSE Skills Review

Revise algebra, indices, surds, fractions, equations, graphs, trigonometry and coordinate geometry.

Reading and Enrichment

Recommended books include Humble Pi (Matt Parker), Things to Make and Do in the Fourth Dimension (Matt Parker) and Alex's Adventures in Numberland (Alex Bellos).

Problem Solving

Attempt problems from UKMT, NRICH and MEI. Focus on communicating reasoning clearly and logically.

Calculator Skills

Become confident using fractions, surds, standard form, tables, equation solving and statistical functions on your calculator.

DR Frost Maths Tasks

Create a free account and complete work on the following topics:

- Indices and standard form
- Surds
- Algebraic fractions
- Rearranging formulae
- Simultaneous equations
- Quadratic equations
- Graphs of linear and quadratic functions
- Completing the square
- Functions and function notation
- Composite and inverse functions
- Coordinate geometry
- Trigonometric identities
- Radians
- Introduction to binomial expansion

Recommended Videos

TLMaths (highly recommended):

- Introduction to Functions

- Algebra for A Level Maths
- Completing the Square
- Coordinate Geometry
- Trigonometry Revision
- Introduction to Calculus
- Binomial Expansion
- Indices and Logarithms

Also use ExamSolutions for Surds, Algebraic Fractions, Functions, Graph Transformations, Radians and Differentiation Basics, and Bicen Maths for Algebra Skills, Problem Solving and Mechanics introductions.

Suggested Summer Programme

- Week 1 – GCSE Higher paper; revise Surds and Indices on Dr Frost.
- Week 2 – Functions and Function Notation; watch TLMaths Functions videos.
- Week 3 – Completing the Square and Coordinate Geometry.
- Week 4 – Trigonometry, Radians and Introduction to Calculus videos.
- Week 5 – Complete a second GCSE Higher paper and review weaknesses.
- Week 6 – Complete a transition worksheet and produce a one-page GCSE technique summary sheet.

September Ready Checklist

- ☐ Manipulate algebra confidently
- ☐ Solve linear, quadratic and simultaneous equations
- ☐ Use index laws fluently
- ☐ Simplify surds
- ☐ Rearrange complex formulae
- ☐ Understand function notation
- ☐ Draw and interpret graphs
- ☐ Use trigonometry confidently
- ☐ Complete Higher GCSE papers with confidence

We look forward to working with you in September and helping you develop into a successful A Level mathematician!