

# Maths Reading List and Bridging to A-Level Work

## Introduction

Before you rush ahead into A-Level textbooks etc please can I encourage you to AVOID learning new content. You will develop misconceptions by teaching yourself and more importantly may be bored when we teach it to you! As a result of lockdown, you are missing out on an essential phase of consolidation and targeted topic intervention. Without this, much of your recent learning will not be committed to long term memory and you will not develop the deeper understanding of GCSE content that A-Level requires as a foundation. A significant proportion of the Year 12 course involves Grade 9 GCSE content applied in more challenging ways. Even if you aren't studying Maths at A-Level there is good reason to continue practising papers to consolidate your knowledge to help support and maths content in whichever A-Levels you are doing. You may also choose to sit the Autumn exam if you feel your Grade doesn't fairly represent your ability.

In Summary, Consolidate GCSE, problem solve, do some background reading, become a Grade 10/11 GCSE Student (i.e. getting 90/95% on your GCSE papers) but DONT just plough through an A-Level textbook.

The resources we are recommending are split into the following sections

- Past Papers – See google Drive
- Problem solving – Problems that put your deeper understanding to the test
- Bridging Courses to A-Level – targeting the harder GCSE content prerequisites for A-Level
- Other links and resources
- Further Reading

All resources (including this document) are available at this google drive location:

<https://drive.google.com/open?id=1ThohEb7roGujQYuk-zlYGqHhliFmGkb6>

OR

[www.shorturl.at/dtDJ6](http://www.shorturl.at/dtDJ6)

## Past Papers

All include answers/mark schemes and many include worked solutions

Easter Paper folder – These were the papers that all Edgbarrow students were set over Easter.

- Practice Papers – 4 sets of 3 papers.
- Real Papers – 4 sets of 3 papers
- Zig Zag – 10 sets of 3

## Problem Solving

Use these resources to deepen your understanding and confidence with GCSE material

AQA 90 KS4 Problem Solving Questions – This has a mixture of 90 foundation and Higher problems. Look at the grading index and pick out some interesting Higher questions to have a go at. Includes full solutions. This is the easiest Problem-Solving booklet
MathsHUBS GCSE problem solving booklet – 112 Questions. some great questions in here. Some overlap to allow you to practice a slight variation on a question you needed a hint on. There are some Riddles on the front and back cover you may find interesting. Solutions not available for these yet but often some google searching will lead you to an explanation.
FMSP – GCSE Problem Solving booklet with solutions. 20 Problem solving scenarios
MEI Problem Solving – 14 Problems. Probably the hardest set of questions

## **Bridging Booklets**

These help you bridge the gap between GCSE and A-Level by focussing on the hardest aspects of the GCSE course.

Pack of 4 Quick fire skill tests to see how deep your understanding is :

- Factorising
- Solving Linear Equations
- Quadratic Equation skills
- Surds

Edexcel Home learning Pack – Focuses on Algebra – Absolutely essential. Start with this as it has nice worked solutions

Edexcel GCSE to A-Level Maths Transition Booklet – Includes answers but no step by step. Covers a broader range of topics and extends beyond Algebra,

Edgbarrow Bridging Booklet – This is normally handed out during induction lesson (in summer term). It goes a little further on some topics than the Transition booklet.

The AMSP – The Advance Maths Support Programme has just launched a transition resource page where they publish a new topic each week.

<https://amsp.org.uk/resource/gcse-alevel-transition-resources>

CGP Headstart Guide - This is a published Workbook to help you bridge the gap between GCSE and A-Level. Its currently FREE to download to a device or £5.95 from amazon if you want something you can write on.

<https://www.amazon.co.uk/Head-Start-Level-Maths-2017-2018/dp/1782947922>

MyMaths Bridging course with lessons and tasks. Make sure you stay on the bridging course pages and don't stray into A-Level. You'll know as the task/lesson will have a 12 or 13 next to indicating that it is Year 12/13 material. Good because there are lessons for each one and you get instant feedback on your answers.

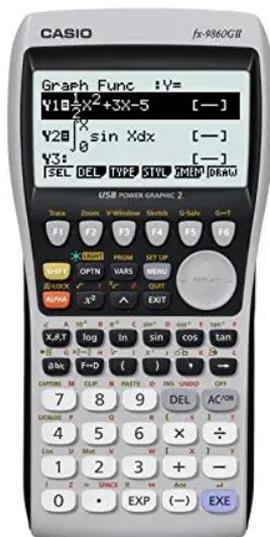
Pure (27 Topics) : <https://app.mymaths.co.uk/myportal/library/30/370/4490>

Statistics (7 Topics) : <https://app.mymaths.co.uk/myportal/library/30/371>

Mechanics (2 Topics) : <https://app.mymaths.co.uk/myportal/library/30/372>

## Other Resources

Familiarise yourself with Graphical Calculators. This isn't a necessity and we appreciate some of you will want to wait to buy at school but for those who have inherited or are keen and able to purchase and try them out these are the CASIO models we recommend. Please be aware that some calculators CANNOT be used in exams as they have functionality that would give you an unfair advantage.



FX-9860GII



FX-CG50

We stock these at a potentially significant discount price as we can buy in bulk and VAT free. However, you will find cheaper in the second-hand market as there are many thousands of students who sell each summer after A-Levels.

In the "Calculator Resources" folder of google drive you will find the following Docs:

- CG50 Quick Start Guide – illustrated guide to get you up and running
- CG50 Full Instruction Manual
- Edexcel – Video tutorials on calculator use. Generic advice on using Casio calculator functionality
- Y12 Induction booklet on calculator

Familiarise yourself with the following tools which we use regularly in A-Level :

[www.Desmos.com](http://www.Desmos.com) – A superb graphing tool (also available as an app on phone and tablet). Useful for Core, Stats and Mechanics.

[www.Geogebra.com](http://www.Geogebra.com) – A highly versatile modelling tool (also available as an app on phone and tablet). Useful for Core, Stats and Mechanics.

<https://amsp.org.uk/resource/maths-feast-materials>

Maths Feast Problem Solving Website

<https://rich.maths.org/8767>

Excellent resources on Thinking Mathematically and Developing Mathematical habits of mind. The NRICH website is a collaboration between the faculties of education and mathematics at Cambridge University.

Numberphile – fascinating videos about numbers!

<https://www.youtube.com/channel/UCoxcjq-8xIDTYp3uz647V5A>

## Recommended Reading

The Balliol College Reading list is a fantastic source of interesting TV programmes, TED talks, Blogs, Podcasts and books to read. The document can be found in the google Drive.

If you wanted to do a bit of mathematical related reading (in no particular order):

- **Why do Buses Come in Threes? (Rob Eastaway/Jeremy Wyndham)**
- **How Long is a Piece of String? (Rob Eastaway/Jeremy Wyndham)**
- **The Hidden Mathematics of Sport (Rob Eastaway/John Haigh)**
- **How Many Socks Make a Pair? (Rob Eastaway)**
- **How to Cut a Cake? (Ian Stewart)**
- **Mathematics of Life (Ian Stewart)**
- **Professor Stewart's Hoard of Mathematical Treasures (Ian Stewart)**
- **Professor Stewart's Cabinet of Mathematical Curiosities (Ian Stewart)**
- **Maths in Minutes (Paul Glendinning)**
- **50 Mathematical Ideas You Really Need to Know (Tony Crilly)**
- **The Number Mysteries (Marcus Du Sautoy)**
- **Alex's Adventures in Numberland (Alex Bellos)**
- **Thinking in Numbers (Daniel Tammet)**

Anyone interested in the maths of the natural world will find this book interesting. Probably more for the scientists amongst you:

- **A mathematical Nature Walk** by John A Adam ISBN : 978-0-691-12895-5

Anyone wanting to study maths at a higher level or to teach it should really have a reasonable grasp of this extensive history of the subject. This book is a serious Tome but then it needs to be. Some fascinating insights into how Maths has developed through the Millenia into the subject we are familiar with today :

- **Mathematics : from the birth of numbers** by Jan Gullberg ISBN : 0-393-04004-X