

# Turing House Sixth Form Bridging Pack for Maths & Further Maths


## So, you are considering A Level Mathematics?

This pack contains a programme of activities that will help you in your transition on to the A Level course in September. It is aimed to be used after you have completed your GCSEs over the summer and the contents will be tested in September to check your suitability for the course you have chosen.

## Why is there such a gap between GCSEs and A Levels?

A Levels are – as their name suggests – advanced qualifications, and so require much more of you as a student. They require you to gain a deeper understanding of the subjects you choose to study. There is a lot more independent work required to demonstrate this deeper learning.

*“GCSE is often highly structured with very specific requirements for homework, whereas at A Level there is greater expectation for taking the initiative in going beyond the set reading and utilising the library to read around and consolidate.” Dr Ellerby*



## Equipment & Organisation

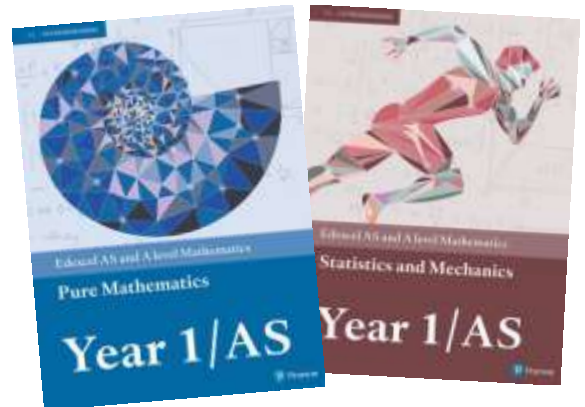
Now you're at A Level, it is important to be organised from the start. You are to keep a Maths folder which will contain the following:

- Progress Tracker for each module
- Assessments
- Formulae Booklet
- Revision Notes

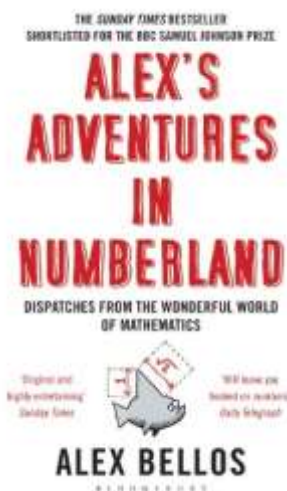
## A Level Mathematics Books

We will be following the Pearson Edexcel Pure and Statistics/Mechanics books.

The Casio Classwiz calculator, which is a requirement of the course, is also available to purchase from the Maths Department.



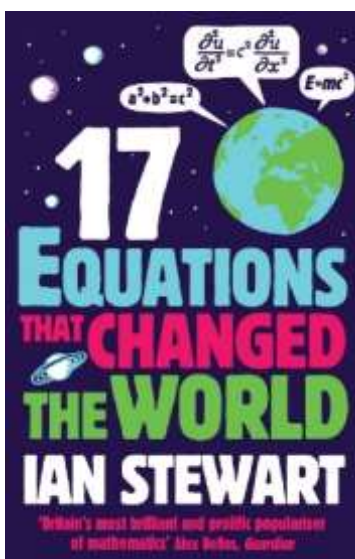
## Book Recommendations



### **Alex's Adventures in Numberland** by Alex Bellos

*Dispatches from the wonderful world of mathematics...*

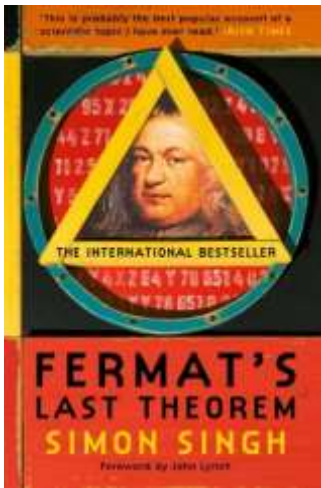
The world of maths can seem mind-boggling, irrelevant and, let's face it, boring. This groundbreaking book reclaims maths from the geeks. Mathematical ideas underpin just about everything in our lives: from the surprising geometry of the 50p piece to how probability can help you win in any casino. In search of weird and wonderful mathematical phenomena, Alex Bellos travels across the globe and meets the world's fastest mental calculators in Germany and a startlingly numerate chimpanzee in Japan. Packed with fascinating, eye-opening anecdotes, Alex's Adventures in Numberland is an exhilarating cocktail of history, reportage and mathematical proofs that will leave you awestruck.



### **Seventeen Equations That Changed the World** by Ian Stewart

*For those that like thought provoking and humorous...*

From Newton's Law of Gravity to the Black-Scholes model used by bankers to predict the markets, equations, are everywhere -- and they are fundamental to everyday life. Seventeen Equations that Changed the World examines seventeen ground-breaking equations that have altered the course of human history. He explores how Pythagoras's Theorem led to GPS and Satnav; how logarithms are applied in architecture; why imaginary numbers were important in the development of the digital camera, and what is really going on with Schrödinger's cat.



## Fermat's Last Theorem by Simon Singh

*'I have a truly marvellous demonstration of this proposition which this margin is too narrow to contain.'*

It was with these words, written in the 1630s, that Pierre de Fermat intrigued and infuriated the mathematics community. For over 350 years, proving Fermat's Last Theorem was the most notorious unsolved mathematical problem, a puzzle whose basics most children could grasp but whose solution eluded the greatest minds in the world. In 1993, after years of secret toil, Englishman Andrew Wiles announced to an astounded audience that he had cracked Fermat's Last Theorem. He had no idea of the nightmare that lay ahead.

## Mathematicians on Twitter



Twitter is a brilliant social media platform and a great way to catch up with prominent mathematicians ... here are some of the most popular.

**Desmos.com**  
@Desmos  
Explore math with our free online graphing calculator and networked classroom activities! Tweets by @lukeselfwalker, @eluberoff (eli), ...

**MathsCareers**  
@MathsCareers  
Website devoted to careers with mathematics, maths in the real world, teachers resources and more.

**Guardian Science**  
@guardianscience  
Science, health and environment news from the @Guardian. Plus, independent comment and analysis from our network of expert science bloggers

**Alex Bellos**  
@alexbellos  
Snowflake Seashell Star, Alex's Adventures in Numberland, Alex Through The Looking-Glass (UK); Here's Looking at Euclid, The Grapes of Math (US)....

**Maths Puzzles**  
@MathsIdeas  
As a teacher of mathematics I have been collecting and using mathematical ideas and puzzles for around 25 years. Thought it was time to share.

**ExamSolutions**  
@ExamSolutions  
My mission is to teach anyone and everyone for free through my video tutorials. If you can help support this aim then I am very grateful. 3000+...

## Mathematics Summer Tasks

At the start of the year you will be given a short test on the topics included in the induction pack. **Pass Grade 60%**



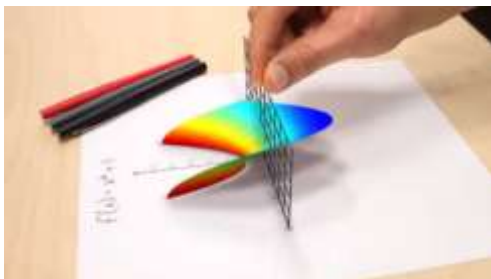
You must complete the bridging course material found on Hegarty Maths.



Read **one** or more of the book recommendations.

## Further Mathematics Summer Tasks

On the second week back you will be tested on your knowledge of Complex Numbers.



Watch the 11 part YouTube 'Imaginary Numbers are Real' by Welch Labs



Read **two** or more of the book recommendations.