



Twyford
C of E
High School

Twyford Advanced Programme (TAP)

The Twyford Advanced Programme
consists of:

- The Oxbridge Programme
- Medicine Society
- Engineering Society
- History Scholars
- Extended Project Qualifications (EPQS)

Oxbridge Programme

This is a programme aimed at preparing students for the application to Oxford or Cambridge University (Oxbridge). The cohort is selected based on GCSE grades and an induction essay.



UNIVERSITY OF
CAMBRIDGE

In Year 12, students can expect:

- A weekly wider reading lesson
- A weekly lesson introducing the Oxbridge system
- Personal statement support
- Information regarding open days, masterclasses and summer schools at Oxford and Cambridge
- The opportunity to attend partnership courses with private schools
- Information and support in applying for mentoring schemes
- Specific guidance for students of African and Caribbean heritage




In Year 13, students can expect:

- Interview workshop
- A mock Oxbridge interview held by governors, directors and lead members of staff
- One-to-one support in writing and editing personal statements

Wider Reading:

To ensure the strongest possible Oxbridge applications, students will need to have read around their interests within their chosen field. Students will receive a monthly Wider Reading Newsletter, with 21 different subjects included. For each subject, there will be articles, books, podcasts, documentaries, free exhibitions and lectures in London.

September 2020



WIDER READING

Twyford Wider Reading Newsletter: September 2020 edition

In this issue:

- Subject-specific articles
- Free enrichment events in London
- Documentaries and podcasts

"If you only read the books that everyone else is reading, you can only think what everyone else is thinking"

—Haruki Murakami

Maths and Engineering

Video/Audio

- Group Theory
<https://www.youtube.com/watch?v=rH0cDa74tE>
- Mathematics and Music
Melvyn Bragg and guests discuss the mathematical structures that lie within the heart of music.
<http://www.bbc.co.uk/programmes/p003c1b9>
- Chaos Theory
Melvyn Bragg examines whether the world is a fundamentally chaotic or orderly place.
<http://www.bbc.co.uk/programmes/p00548f6>
- The Maths of Future Computing
This lecture examines the mathematics behind computing, starting with the history of the explosive growth of computer technology, from code breaking through to all aspects of modern communication and security, as well as the simulation of physical processes as varied as the evolution of the universe to predicting the weather. It looks at the types of problems computers can solve, as well as the future possibilities of quantum computing.
Watch online at <https://www.gresham.ac.uk/lectures-and-events/maths-future-computing>
- Code Making and Breaking
We dive into the murky world of cryptology
https://www.thenakedscientists.com/sites/default/files/media/podcasts/episodes/Naked_Scientists_Show_19.09.17.mp3
- Mathematical Practice and the 18th century voyages of scientific exploration
The lecture will focus upon mathematical expeditions, outlining how the use of mathematics has been instrumental to the success of historical voyages of exploration.
<https://www.gresham.ac.uk/lectures-and-events/british-voyages-of-scientific-exploration>
- Ex-Twyford student and comedian Harry Baker's brilliant celebration of the prime numbers
https://www.ted.com/talks/harry_baker_a_love_poem_for_lonely_prime_numbers#t-281726

Books

- Does God Play Dice? By Ian Stewart
A very accessible introduction to the exciting field of chaos. It gives an insight into the mathematics behind fractals as well as many other situations in which you can find chaotic behaviour.

Events

- LIVE online lecture: Number Theory—queen of mathematics
Monday 28th September 4.30pm <https://www.gresham.ac.uk/lectures-and-events/number-theory>
- LIVE online lecture: The world of Isaac Newton
Monday 28th September 6pm <https://www.gresham.ac.uk/lectures-and-events/isaac-newtons-world>
- LIVE online lecture: The Mathematics of musical composition
Tuesday 13th October 1pm <https://www.gresham.ac.uk/lectures-and-events/maths-music>
- LIVE online lecture: An Introduction to Algorithms
Tuesday 20th October 6pm <https://www.gresham.ac.uk/lectures-and-events/algorithms-intro>

MedSoc

What is MedSoc?

MedSoc is a program for aspiring doctors, dentists and veterinarians. The program runs for two years supporting like-minded individuals through the exciting and challenging journey to becoming a medical professional.



In Year 12, students can expect to attend:

- Support sessions designed to help students develop their medical portfolios ready for university applications
- Entrance exam preparation
- Personal statement support
- Problem based learning, similar to those used in some universities
- Debates around issues using bioethics

In Year 13, students can expect to attend:

- Entrance exam preparation
- Personal statement workshops
- Mock interview advice and preparation sessions
- Mock interview practise following the more commonly used MMI style of interview
- Mock group interview practise
- Debates around issues using bioethics

External Speaker Program

There is an extensive program of external speakers, many of whom specialise in the medical field.

Talks take place after school and students are strongly encouraged to attend these talks to widen their understanding of different medical disciplines.

MedSoc External Speaker
Thursday 12th March
3.30-4.30 A20



NHS
Guy's and St Thomas'
NHS Foundation Trust

Dr Catherine Williamson – Professor of Women's Health at King's College London, consultant obstetric physician at St Thomas's Hospital

Dr Williamson balances her time between her practice at St Thomas's hospital and conducting research with at King's College London. Please come along to hear her talking about her career in obstetrics as well as the current research she is undertaking.

All students interested in dentistry or medicine welcome

EngSoc

What is EngSoc?

EngSoc is a programme for aspiring engineers. The program runs for two years supporting students to learn about studying this popular subject at university along with the huge variety of careers it will open up.



Throughout their A-Levels students can expect:

- Directions to media relating to engineering news
- Information on the different types of engineering courses and what careers they prepare you for
- Support with pre-interview exam preparation
- Personal statement support
- Opportunities to take part in CREST for an engineering based project

External Speaker Program

To present examples of the huge variety of careers engineering can offer, speakers working across many fields of engineering are invited to attend the school for short talks followed by Q & A sessions.

EngSoc Wider Reading

In addition to the regularly updated media reading suggestions, a selection of books about different aspects of engineering are recommended for students so that they can find out about aspects of engineering in more detail.

Further information about extra-curricular events in the Science department can be found at <https://twyford.ealing.sch.uk/specialisms/science>

History Scholars

Members will be invited to partake in fortnightly debates on Monday lunchtimes. We will be addressing a variety of historical topics, and questioning a number of widely held historical beliefs and concepts. The debates will enable those of you who are genuinely interested in history to really explore the subject, and engage with others in lively discussion. This will also give you the opportunity to develop your confidence, practise speaking in public and 'thinking on your feet', all important developmental skills for future university and job interviews.

Applying to be a member of the Senior History Scholars does not commit you to being historians for the rest of your school and university careers. It is simply an opportunity for you to explore the subject further, and the skills and confidence that you will acquire through being part of the group will be beneficial to a number of different subjects and future opportunities.

Later on in the programme, however, we will spend time working towards the History Aptitude Tests for those who wish to apply to read History or History related subjects at Oxbridge. We will also work on interview techniques and practice for anyone applying to read history or history related subjects at other universities.

'I would like to thank you for allowing me to take part in the senior history scholars debates. I really enjoyed attending the debates and hearing about topics I have never even thought twice about as well as also participating in my two debates which I enjoyed both researching the interesting topics as well as practicing and developing my debating skills while also improving my public speaking.'

'Thanks for the opportunity provided with History Scholars so far - the debates have been so interesting, and it's been fun a great learning curve writing the speeches for them!'

'I have thoroughly enjoyed being a member of the History Scholars society so far. So much in fact, that I would like to apply to do a history degree at university!'

Examples of previous debates:

Populism isn't always a negative force

Monuments to historical figures should remain

There's no need for a United Kingdom anymore

Black civil rights movements have had far more success in the US than the UK

Revolution always leads to progress

Extended Project Qualifications

These projects involve detailed research into any topic of the student's choice, allowing students the opportunity to go outside and beyond their A Level subjects. Students will do the vast majority of this research over the summer holidays at the end of Year 12 and will work one to one in the autumn and spring term with a supervising member of staff to turn this research into a piece of extended writing.

The projects can take the form either of a 5000 word essay, or an artefact (such as a piece of art, a science experiment or a film etc) accompanied by a 1000 word essay.

This essentially equips students with the skills needed to bridge the gap between A Level and undergraduate style learning, as well as looking very impressive on personal statements.

It also supplies university interviewers with a topic to discuss with the applicants, which can demonstrate the breadth and depth of the students' knowledge and interest in their subject.

Examples of previous projects:

University Course	EPQ Title
History and Politics	Given the radical ideas present in the country at the time, why was the English Civil War outcome so conservative?
Animation	To what extent are animated features able to display complex emotions?
English Literature and Drama	Should censorship exist in the theatre?
Geography	What is the effectiveness of COP21 in aiding developing countries with the transition to greener climates without inhibiting economic development?
Aeronautical Engineering	To what extent have aeronautical advances been responsible for <u>globalisation</u> ?
Medicine	How effective are treatments of secondary cancers in primary sites?
Economics	An ongoing slump - The Japanese Economy 1990-2010
Maths and Computer Science	How effective is game theory at helping AI to win computer games?
English Literature	How has the Cinderella story of 'rags to riches' evolved?
Politics	Are we living in 1984?





Twyford
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High School

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