

A-Level Maths Super Curricular Activities

Competitions	
Nov 2021	Senior UKMT Maths challenge

Taster Events and Online Webinars / Lectures	
	Problem Solving Matters - problem solving course for year 12 students applying to read Maths hosted by a number of universities
Launching in April	Online Maths Club – Oxford
	UNIQ Online programme for university preparation.
Access anytime	Future Learn MOOCs (add these manually to Uni-Frog once complete) Maths Puzzles: Cryptarithms, Symbologies and Secret Codes Applications of AI Technology Davidson Institute Maths Puzzles STEM Centre – Proportion-ratio scaling
On Demand	University of Birmingham Online Masterclasses (You need to sign up to gain access for free) (Masks + lockdown) x vaccines: The mathematics of the pandemic response Using maths to solve a water delivery problem in the most efficient way

Uni Frog Tasks	
Read, Watch, Listen	Use this area to find Subject specific articles, films, TED Talks and books. Read, Watch, Listen on UniFrog
MOOCs	Use the MOOC function to search Maths online courses in a range of topics. There are 100+ MOOCs that you can start immediately in History. Maths MOOCs

Websites

[Explore](#) - Topical questions to explore involving a range of subjects

[Khan academy](#) - Maths resources for students/teachers/parents

[Brilliant.org](#) - develop quantitative skills in Maths, Physics and computer science through questions and challenges- free trial then charges may apply.

[e-Trust STEM Challenges](#)- resources and activities to support a range of challenges for students

[Advanced Mathematics Support Programme](#) - A government-funded initiative. It aims to increase participation in Core Maths, AS/A level Mathematics and Further Mathematics.

[Harvard University problems of the week](#)

[KS5 Physics and Maths Tutor STEP](#)- resources and past papers for STEP exam

[KS5 The Intrepid Mathematician](#) - a quirky resource for those who love maths.

[Oxford tutor](#), Dr Vicky Neale's Maths resources and blog.

[KS5 Tomrocksmaths.com](#) - Oxford University tutor with lots of interesting maths resources.

[Maths.org](#) - Support programme for STEP Maths exam

Podcasts & Videos

[Oxford Mathematics Institute](#) - Public Lectures and Events.

[Oxford Mathematics YouTube channel.](#)

[Oxford Mathematics – Student Lectures.](#)

[Oxford University Online Maths Club](#) – for year 12 students on Thursdays at 4.30

[Influencing HIV/AIDS Policy in India through Mathematical Modelling](#)- Oxford University Maths research

[Helping the “Greeks to Run Faster”](#)- Oxford University Maths Research

University of Birmingham You Tube Lectures

[Watch Why do mathematicians care about a pair of pants](#) (Dr Tyler Kelly)

[Watch Fighting disease with mathematics](#) (Dr Sara Jabbari)

[Watch The emergent rhythms of health and disease](#) (Professor John Terry)

Journals & Magazines

Quanta Magazine

<https://www.quantamagazine.org/tag/mathematics/>

Plus magazine

<https://plus.maths.org/content/>

Additional Reading

A History of Mathematics, by Carl B Boyer

Alcock, Lara How to Study for a Mathematics Degree (2012)

Allenby, Reg Numbers and Proofs (1997)

Bellos, Alex Alex’s Adventures in Numberland (2010)

Clegg, Brian A Brief History of Infinity (2003)

Courant, Robbins and Stewart What is Mathematics? (1996)

Dudley, Underwood Is Mathematics Inevitable? A Miscellany (2008)

Earl, Richard Towards Higher Mathematics: A Companion (2017)

Elwes, Richard MATHS 1001 (2010), Maths in 100 Key Breakthroughs (2013)

Gardiner, Martin The Colossal Book of Mathematics (2001)

Gowers, Tim Mathematics: A Very Short Introduction (2002)

Fermat’s last theorem, by Simon Singh.

Hofstadter, Douglas Gödel, Escher, Bach: an Eternal Golden Braid (1979)

Houston, Kevin How to Think Like a Mathematician (2009)

Körner, T. W. The Pleasures of Counting (1996)

Liebeck, Martin A Concise Introduction to Pure Mathematics (2000)

Odifreddi, Piergiorgio The Mathematical Century: The 30 Greatest Problems of the Last 100 Years (2004)

Piper, Fred & Murphy, Sean Cryptography: A Very Short Introduction (2002)

KS5 Polya, George How to Solve It (1945)

Leventhorpe

a business and enterprise academy

