



Super Curriculum – Maths KS3



Reading:

- The Number Devil - Hans Magnus Enzensberger
- Murderous Maths - Kjartan Boskitt
- The Code Book (abridged) - Simon Singh
- Alex's Adventures in Numberland - Alex Bellos
- Alex through the Looking Graph - Alex Bellos



Watching:

- <https://www.youtube.com/user/numberphile> Popular twitter, Youtube and podcast content
- https://www.ted.com/playlists/189/math_talks_to_blow_your_mind TED Talks: Maths Playlist
- <https://www.rigb.org/christmas-lectures/2019-secrets-and-lies> Royal Institution Christmas Lectures 2019.
- YouTube Channel - MathsAntics



Listening:

- More or less behind the stats: <http://podcasts.ox.ac.uk/units/mathematical-institute>
- Maths Appeal: Maths podcast hosted by TV presenter and University Challenge contestant Bobby Seagull, aimed at making maths easy and fun for all.
- Math Dude: Another podcast designed to allow everyone to access maths
- Simon Singh's Numbers: Another podcast designed to allow everyone to access maths
- StatsBomb – Football Statistics Podcast
- Off The Charts! – NFL Statistics podcast
- Opta football statics English football Twitter feed
- CRICKVIZ – Cricket Statistics and analysis
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Doing:

- BBC Bitesize launch daily home learning lessons for all ages.
- Khan Academy Activities.



Academic Enrichment:

- KS3 Advanced Maths
- Content includes UKMT Junior Maths Challenge preparation, Code Breaking, Egyptian fractions and more.



Competitions:

- UKMT Intermediate Maths Challenge (February - Year 11 and below)
- UKMT Intermediate Team Challenge (Year 11 and below)*
- UKMT Junior Maths Challenge (April - Year 8 and below)
- UKMT Junior Team Challenge (Year 8 and below)*



Super Curriculum – Maths KS4



Reading:

- Thinking In Numbers - Daniel Tammet
- The Code Book - Simon Singh
- The Indisputable Existence of Santa Claus: The Mathematics of Christmas – Thomas Evans and Hannah Fry
- The Mathematics of Love – Hannah Fry
- Hello World – Hannah Fry
- The Signal and the Noise – Nate Silver
- Numb and Number (William Hartson)
- Why study mathematics (Vicky Neale)
- The wonder book of geometry (David Acheson)
- The Simpsons and their mathematical secrets (Simon Singh)
- Mathematics: A very short introduction (Timothy Gowers)
- Solving Mathematical Problems (Terrance Tao)



Watching:

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- <https://www.rigb.org/christmas-lectures/2019-secrets-and-lies> Royal Institution Christmas Lectures 2019.



Listening:

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- StatsBomb – Football Statistics Podcast
- Off The Charts! – NFL Statistics podcast
- Opta football statics English football Twitter feed
- CRICKVIZ – Cricket Statistics and analysis
- Podcast - The Secret of Mathematics (Oxford University) - <https://podcasts.ox.ac.uk/series/secrets-mathematics>



Doing:

- BBC Bitesize launch daily home learning lessons for all ages.
- Khan Academy Activities.
- <https://maths.org/home>
- <https://twitter.com/mmpmaths?lang=en>
- University of Cambridge site with learnings for both GCSE and 16+ students.



Academic Enrichment:

- KS4 Advanced Maths
- Pupils are encouraged to study towards the AQA Further Mathematics (Level 2) qualification.
- The content of the course includes topics that would otherwise only be met for the first time at A Level (trigonometric equations, trigonometric identities, matrices, binomial expansion, equation of a circle, factor theorem)



Competitions:

- UKMT Girls Olympiad (October – Year 13, Year 12 and Year 11)
- UKMT Intermediate Maths Challenge (February - Year 11 and below)
- UKMT Intermediate Team Challenge (Year 11 and below)*



Super Curriculum – Maths KS5



Reading:

- The Book of Curious and Interesting Puzzles - David Wells
- What is Mathematics? - Richard Courant & Herbert Robbins
- A Brief History of Time – Stephen Hawking
- Beyond Infinity – Eugenia Cheng
- Fermat's Last Theorem – Simon Singh
- 1089 and All That: A Journey Into Mathematics - David Acheson
- Closing the Gap: The Quest to Understand Prime Numbers – Vicky Neale
- The Penguin Dictionary of Curious and Interesting Numbers - David Wells
- Crypto - Steven Levy The Code Book - Simon Singh
- The Music of the Primes – Marcus du Sautoy
- Professor Stewart's Cabinet of Mathematical Curiosities – Ian Stewart
- Uncle Petros and Goldbach's Conjecture - Apostolos Doxiadis
- Introducing Fractal Geometry - Nigel Lesmoir-Gordon, Will Rood & Ralph Edney
- Journey Through Genius – William Dunham
- Five Equations That Changed the World - Michael Guillen
- The Book of Numbers - Tim Glynne-Jones
- The Mathematics of Love – Hannah Fry
- Hello World – Hannah Fry
- The Signal and the Noise – Nate Silver
- The Mathematical Olympiad Handbook - A. Gardiner
- Letters to a Young Mathematician - Ian Stewart
- Mathematical Mountaintops - John L. Casti
- What Do You Care What Other People Think? - Richard P Feynmann
- God Created The Integers - Stephen Hawking
- A Mathematician's Apology - G.H. Hardy
- Chaos - James Gleick
- Lewis Carroll In Numberland - Robin Wilson
- Godel, Escher, Bach: An Eternal Golden Braid - Douglas R. Hofstadter
- Chaotic Fish Ponds and Mirror Universes - Richard Elwes
- The ten equations that rule the world (David Sumpter)
- Solving Mathematical Problems (Terrance Tao)



- Mathematics: A very short introduction (Timothy Gowers)
- The Simpsons and their mathematical secrets (Simon Singh)
- The wonder book of geometry (David Acheson)
- How to study for a mathematics degree (Laura Alcock)
- Why study mathematics (Vicky Neale)



Watching:

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- https://www.ted.com/playlists/189/math_talks_to_blow_your_mind TED Talks: Maths Playlist
- <https://www.rigb.org/christmas-lectures/2019-secrets-and-lies> Royal Institution Christmas Lectures 2019.
- <https://www.youtube.com/watch?v=3esQVND-c4> How to prepare for MAT (Oxford Mathematics Admissions Test)
- YouTube Channel - 3Blue1Brown
- YouTube Channel - Patrick JMT



Listening:

- More or less behind the stats <http://podcasts.ox.ac.uk/units/mathematical-institute>
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- CRICKVIZ – Cricket Statistics and analysis
- Podcast - The Secret of Mathematics (Oxford University) - <https://podcasts.ox.ac.uk/series/secrets-mathematics>
- Podcast - My Favourite Theorem (Kevin Knudson) - <https://kpknudson.com/my-favorite-theorem>



Doing:

- Moocs: Short/Medium length free courses run by Universities around the world, allowing participants to gain an insight into many different concepts, mathematical and otherwise.
- <https://maths.org/home>
- <https://twitter.com/mmpmaths?lang=en>
- University of Cambridge site with learnings for both GCSE and 16+ students.
- UKMT previous challenges and solutions
- <https://www.ukmt.org.uk/competitions/solo/junior-mathematical-challenge/archive>
- <https://www.ukmt.org.uk/competitions/solo/intermediate-mathematical-challenge/archive>
- <https://www.ukmt.org.uk/competitions/solo/senior-mathematical-challenge/archive>
- STEP past papers and preparation
- <https://tomrocksmaths.com/>
- <https://www.admissionstesting.org/for-test-takers/step/preparing-for-step/>
- MAT past papers and preparation
- <https://www.maths.ox.ac.uk/study-here/undergraduate-study/maths-admissions-test>
- <https://sjcinspire.com/category/maths+questions/>



Academic Enrichment:

- KS5 Oxbridge
- Content includes Further Algebra, Combinatorics, Number Theory, Logic, Further Geometry and more.
- <https://maths.org/step/>
- <https://www.maths.ox.ac.uk/about-us/life-oxford-mathematics/oxford-mathematics-alphabet>



- UKMT Senior Maths Challenge (November - Year 12 and Year 13)
- UKMT Senior Team Challenge (Year 12 and Year 13)*
- UKMT Girls Olympiad (October – Year 13, Year 12 and Year 11)