

MATHS

SUPER CURRICULUM ACTIVITIES

WEBSITES:

- NRICH: Provides free online mathematics resources, including activities, games, and problem-solving challenges. [Link: <https://nrich.maths.org/>]
- MathisFun: Provides explanations, examples, and interactive activities to help understand various math concepts. [Link: <https://www.mathsisfun.com/>]
- Khan Academy: Provides comprehensive video lessons and practice exercises for math topics at all levels. [Link: <https://www.khanacademy.org/>]

BOOKS:

- "Mathematics: A Very Short Introduction" by Timothy Gowers - Introduces fundamental mathematical ideas and concepts in a concise and accessible manner.
- "How Not to Be Wrong: The Power of Mathematical Thinking" by Jordan Ellenberg

SPECIALIST MAGAZINES/ARTICLES/JOURNALS:

- e16plus Newsletter
- The e16plus Newsletter is aimed at 16 - 19 year olds who are interested in mathematics. It aims to keep readers up to date with mathematical news, people, and activities. It features careers that make use of mathematics, mathematics in use in the real world, mathematical history, competitions, and much more. <https://ima.org.uk/support/student/e16plus-newsletter/>
- Plus Magazine: An online magazine that explores mathematics and its applications. [Link: <https://plus.maths.org/>]
- "How Mathematics Can Save Your Life" by Hannah Fry [Link: <https://www.theguardian.com/science/2020/feb/23/how-mathematics-can-save-your-life>]
- "The Mathematics of Beauty" by Marcus du Sautoy [Link: <https://www.theguardian.com/science/2011/feb/10/marcus-du-sautoy-mathematics-beauty>]
- Podcasts:
- "More or Less: Behind the Stats" by BBC Radio 4 [Link: <https://www.bbc.co.uk/programmes/p02nrss1>]
- "Mathematics: Making the Invisible Visible" by BBC Radio 4 [Link: <https://www.bbc.co.uk/programmes/b00srz5b>]

PODCASTS:

- "More or Less: Behind the Stats" by BBC Radio 4 [Link: <https://www.bbc.co.uk/programmes/p02nrss1>]
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FILMS AND DOCUMENTARIES:

- "The Man Who Knew Infinity" (2015): A biographical drama about the Indian mathematician Srinivasa Ramanujan.
- "The Story of Maths" (2008): A documentary series exploring the history and development of mathematics.

YOUTUBE CHANNELS:

- Numberphile: Features videos exploring interesting mathematical concepts and puzzles. [Link: <https://www.youtube.com/user/numberphile>]
- 3Blue1Brown: Provides visually appealing explanations of various mathematical concepts. [Link: <https://www.youtube.com/c/3blue1brown>]

MOOCS (MASSIVE OPEN ONLINE COURSES):

- Coursera: Offers a variety of math courses, including "Mathematics for Machine Learning" and "Introduction to Mathematical Thinking." [Link: <https://www.coursera.org/>]
- edX: Provides math courses from universities like MIT and Harvard, such as "Calculus: Single Variable" and "Linear Algebra." [Link: <https://www.edx.org/>]

ONLINE SEMINARS/LECTURES:

- **Arthur Benjamin:** A mathematician known for TED Talks on the magic of mathematics, mental math, and engaging math tricks for students.
 - **Marcus du Sautoy:** Renowned British mathematician who presents TED Talks on various mathematical concepts and the beauty of mathematics.
 - **Hannah Fry:** Mathematician and author discussing math's role in everyday life, from predicting human behaviour to understanding algorithms in her TED Talks.
 - **Vi Hart:** Known for visually stimulating math videos on YouTube, her online content serves as a valuable resource for math students.
- To access their TED Talks, visit the TED website or search for their names on YouTube. You can also filter TED Talks by topic and audience to find content suitable for secondary school math students in the UK.

SOCIAL MEDIA ACCOUNTS:

- Liverpool Maths School - <https://twitter.com/>
- LivMathsSchool · University of Oxford Mathematical Institute - <https://twitter.com/oxunimaths>
- Visual Capitalist - Data visuals - <https://twitter.com/VisualCap>
- Our World in Data - <https://twitter.com/OurWorldInData>

PLACES TO VISIT:

- Festival of the spoken nerd - <https://festivalofthespokennerd.com/>
- Bletchley Park - <https://bletchleypark.org.uk/>
- Manchester Science and Industry Museum - <https://www.scienceandindustrymuseum.org.uk/>

LOCAL CLUBS OR SOCIETIES:

- Maths Society - <https://www.mathsociety.org.uk/>
- Liverpool Maths Society - <https://www.livmathssoc.org.uk/cgi-bin/sews.py?FrontPage>
- Liverpool Maths School - Outreach courses
<https://liverpoolmathsschool.org/outreach-reaching-your-potential/>

CHALLENGES AND COMPETITIONS:

- UK Mathematics Trust (UKMT) Challenges: National math competitions for various age groups. [Link: <https://www.ukmt.org.uk/individual-mathematical-challenges/>]
- National Cipher Challenge: A cryptography competition that involves solving mathematical puzzles. [Link: <https://www.cipherchallenge.org/>]