



SUPER CURRICULUM

PLANNING KS3 – Maths



SUPER CURRICULUM

CONTENTS – KEYS



Reading Tasks



Watching Tasks



Listening Tasks



Writing Tasks



Creative Thinking Tasks



Visiting/Virtual Visiting Tasks



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Purpose and Rationale

At Hitchin Boys' School we firmly believe that students should study a breadth of subjects that develop them into well-rounded individuals. Each curriculum area has comprehensive schemes of work in place that ensure students acquire substantial knowledge and understanding within each subject. We also provide opportunities for students to read around the subject, conduct research into key areas of study and be creative. However, we recognise that there is only a finite amount of time in the school day and we do not want this to restrict the extent to which students can deepen and further enrich their learning.

To ensure students continue to develop their learning outside of the classroom, we have created a Super Curriculum that provides inspirational tasks, activities and opportunities for students to engage with outside of school. These activities can take many forms including reading, watching videos online, downloading podcasts, attending lectures, visiting museums or entering academic competitions. These are created by subject teachers and designed to complement the curriculum students' study in school. It provides students with the opportunity to deepen their knowledge and understanding of a subject, field or discipline that they may have an existing passion with or a curiosity about.

Whilst the completion of Super Curriculum tasks is not compulsory, we highly recommend that every student should engage with an area that interest them. As students work from Year 7 to 13, they will have the opportunity to build up a strong portfolio of Super Curriculum tasks. In an ever more competitive world, it is key for students to be able to demonstrate the opportunities and independent study they have taken outside of their academic studies.







Mr F Moane
Head Teacher

Mr C Bajak
Super Curriculum co-Ordinator









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PLANNING KS3 – Maths

Tasks	Year 7
<p>Reading Tasks</p> 	<p>Sir Cumference and the First Round Table: A Math Adventure by Cindy Neuschwander and Wayne Green</p> <p>The Adventures of Penrose the Mathematical Cat by Theoni Pappas</p>
<p>Watching Tasks</p> 	<p>Youtube – Numberphile</p> <p>Watch 'The Num8er My5teries' By The Royal Institution https://www.rigb.org/christmas-lectures/watch/2006/the-num8er-my5teries/lecture-2</p> <p>Watch 'It's a Numbers Game' on BT Sport</p> <p>Donald in Mathmagic Land https://www.youtube.com/watch?v=U_ZHsk0-eF0</p>
<p>Listening Tasks</p> 	<p>A brief history of maths by Marcus du Sautoy https://www.bbc.co.uk/programmes/b00srz5b</p> <p>The Infinite Monkey Cage on BBC Radio 4</p>
<p>Writing Tasks</p> 	<p>Research a famous mathematician and write a report on their contributions to mathematics.</p> <p>Research Hilbert's Grand Hotel and write a summary of your findings.</p>
<p>Creative Thinking Tasks</p> 	<p>wild.maths.org – have a go at some of the maths problems</p> <p>Create a mobius strip out of paper.</p> <p>Visit https://mathigon.org/timeline and research some of the influential mathematicians throughout history.</p> <p>Try some of the Junior Maths Challenge puzzles on the UKMT website.</p>
<p>Visiting/Virtual Visiting Tasks</p> 	<p>Maths Gallery at the Science Museum</p> <p>Legoland - Imagination Centre</p> <p>Use google maps to explore structures based on different mathematical shapes e.g. Pyramids of Giza, The Eden Project, The Gherkin, Sydney Opera House</p>









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Tasks	Year 8
<p>Reading Tasks</p> 	<p>Flatland: A Romance of Many Dimensions by Edwin A. Abbott</p> <p>Murderous Maths Series</p>
<p>Watching Tasks</p> 	<p>Youtube - Stand Up Maths</p> <p>Youtube – Numberphile</p> <p>Watch 'It's a Numbers Game' on BT Sport</p> <p>Beautiful Equations (2010) A BBC documentary about the links between maths and art. https://www.bbc.co.uk/programmes/b00wltbm</p>
<p>Listening Tasks</p> 	<p>'Taking Maths Further' Podcast</p>
<p>Writing Tasks</p> 	<p>Create a poster on the 4 Colour Map Theory</p>
<p>Creative Thinking Tasks</p> 	<p>Make your own 4-, 6-, 10- and 12-sided dice.</p> <p>Visit https://mathigon.org/timeline and research some of the influential mathematicians throughout history.</p> <p>Download the SET daily puzzle app on your phone.</p> <p>Research and construct a Sierpinski Triangle.</p> <p>Try some of the Junior Maths Challenge puzzles on the UKMT website.</p>
<p>Visiting/Virtual Visiting Tasks</p> 	<p>Visit Bletchley Park and learn about codebreaking using maths.</p>









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Tasks	Year 9
<p>Reading Tasks</p> 	<p>The Simpsons and Their Mathematical Secrets - Simon Singh</p> <p>Chalkdust Magazine for the Mathematically Curious - https://chalkdustmagazine.com/</p> <p>This is not a maths book by Anna Weltman</p>
<p>Watching Tasks</p> 	<p>Youtube – Numberphile</p> <p>The Colours of Infinity - https://www.youtube.com/watch?v=DyeR19m8gGk</p> <p>Watch 'It's a Numbers Game' on BT Sport</p> <p>Watch the video on people using everyday objects to find pi! https://www.sciencebuddies.org/stem-activities/find-Pi</p> <p>A Beautiful Mind</p>
<p>Listening Tasks</p> 	<p>Listen to the maths podcast 'What's the Point' https://podcasts.apple.com/gb/podcast/300-tmd-math-is-a-playground-so-play/id355421944?i=1000381873054</p> <p>Listen to 'Travels in a Mathematical World' by Peter Rowlett</p>
<p>Writing Tasks</p> 	<p>Read through the article https://nrich.maths.org/1443 and create your own schedule for a tournament.</p> <p>Use the 'Man and the Rise of Civilisation' documentaries to create your own mathematical timeline of key events.</p>
<p>Creative Thinking Tasks</p> 	<p>How Tall is That Tree (Trigonometry)</p> <p>Research and create John Napier's calculator.</p> <p>Visit https://mathigon.org/timeline and research some of the influential mathematicians throughout history.</p> <p>Try some of the Intermediate Maths Challenge puzzles on the UKMT website.</p>
<p>Visiting/Virtual Visiting Tasks</p> 	<p>Visit Bletchley Park to explore the world of codebreaking.</p> <p>Bank of England Museum (https://www.bankofengland.co.uk/museum)</p>








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PLANNING KS4 – Maths

Tasks	Year 10
Reading Tasks 	Mathematics Minus Fear by Lawrence Potter Why do busses come in threes? The Hidden Mathematics of Everyday Life by Rob Eastaway and Jeremy Wyndham
Watching Tasks 	Youtube – Numberphile Watch 'It's a Numbers Game' on BT Sport The Imitation Game Moneyball – a film about statistics in sport
Listening Tasks 	Listen to the podcast 'Relatively Prime' by Samuel Hansen
Writing Tasks 	Research Pierre Fermat and write a report on his contributions to mathematics. Research and write a proof that root 2 is irrational.
Creative Thinking Tasks 	Try some of the Intermediate Maths Challenge puzzles on the UKMT website. Download the Sumaze!2 App from the app store Create a revision video for another student on a topic of your choice. Try the weekly Kings Maths School problem: https://www.kingsmathsschool.com/weekly-maths-challenge
Visiting/Virtual Visiting Tasks 	Visit Bletchley Park to explore the world of codebreaking.



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Tasks	Year 11
<p>Reading Tasks</p> 	<p>The Code Book by Simon Singh</p> <p>The Equation That Couldn't be Solved https://www.amazon.co.uk/Equation-That-Couldnt-Solved-Mathematical/dp/0743258215</p>
<p>Watching Tasks</p> 	<p>Youtube – Numberphile</p> <p>Watch this video on population growth: https://www.gapminder.org/videos/population-growth-explained-with-ikea-boxes/</p> <p>Watch 'It's a Numbers Game' on BT Sport</p> <p>The Man Who Knew Infinity</p>
<p>Listening Tasks</p> 	<p>Listen to some of the radio 4 maths documentaries: http://www.bbc.co.uk/radio4/features/collections/mathematics/</p>
<p>Writing Tasks</p> 	<p>Create a GCSE revision resource on a topic of your choice.</p> <p>Research the Enigma machine, and write a summary of how it worked.</p> <p>Test yourself on these mega quadratic equations: https://nrich.maths.org/11009</p>
<p>Creative Thinking Tasks</p> 	<p>Try some of the Senior Maths Challenge puzzles on the UKMT website</p> <p>Try the weekly Kings Maths School problem: https://www.kingsmathsschool.com/weekly-maths-challenge</p> <p>Learn about imaginary numbers: https://www.khanacademy.org/math/algebra2/x2ec2f6f830c9fb89:complex/x2ec2f6f830c9fb89:complex-number/v/complex-number-intro</p>



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Visiting/Virtual Visiting Tasks




Visit Bletchley Park to explore the world of codebreaking.

PLANNING KS5 – Maths


Tasks	Year 12
<p>Reading Tasks</p>	<p>Things to make and do in the Fourth Dimension by Matt Parker Fermat's Last Theorem - Simon Singh How to Make the World Add Up by Tim Harford A History of Mathematics by Carl Bouger Paradoxes in Mathematics by Stanley J Farlow</p>
<p>Watching Tasks</p>	<p>Youtube - Numberphile Watch episodes from Dara O'Briain's School of Hard Sums! https://www.youtube.com/watch?v=PNzUSi4kNKA</p>
<p>Listening Tasks</p>	<p>'Taking Maths Further' Podcast by Peter Rowlett and Kate Steckles</p>
<p>Writing Tasks</p>	<p>Try some of the STEP past papers https://www.admissionstesting.org/for-test-takers/step/about-step/</p>
<p>Creative Thinking Tasks</p>	<p>Project Euler (online) Try some of the Senior Maths Challenge puzzles on the UKMT website. Try the weekly Kings Maths School problem: https://www.kingsmathsschool.com/weekly-maths-challenge Take part in the University of Southampton's Cipher Challenge Use the open university resources to explore some university level maths: https://www.amazon.co.uk/b/ref=mh_s9_acss_cg_m4a01_1_a1_w?node=22600637031&pf_rd_m=A3P5ROKL5A1OLE&pf_rd_s=mobile-hybrid-3&pf_rd_r=DDYJ2B584MZJ04Q5BD4K&pf_rd_t=1201&pf_rd_p=895ba324-acda-443c-a014-adfe2437dc92&pf_rd_i=17660351031</p>





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<p>Visiting/Virtual Visiting Tasks</p> 	<p>Complete the London Maths Trail http://www.themathszone.com/wordpress/wp-content/uploads/2012/03/Central-London-Trail.pdf</p> <p>Bletchley Park</p>
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Tasks	Year 13
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<p>Reading Tasks</p> 	<p>Fermat's Last Theorem - Simon Singh Geometry and the Imagination - David Hilbert and Stefan Cohn-Vossen How Round is Your Circle? - Chris Sangwin and John Bryant The Mathematics of Ciphers by S.C. Coutino Concepts of Modern Mathematics by Ian Stewart</p>
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<p>Watching Tasks</p> 	<p>Youtube - Numberphile Watch episodes from Dara O'Briain's School of Hard Sums How does maths guide ships at sea? https://www.youtube.com/watch?v=AGCUm_jWtt4 Julia Robinson and Hilbert's Tenth Problem – a biographical documentary about an American mathematician. Learn about Game Theory https://www.youtube.com/watch?v=MHS-hTjGgSY</p>
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<p>Listening Tasks</p> 	<p>Listen to some Radio 4 maths documentaries: http://www.bbc.co.uk/radio4/features/collections/mathematics/</p>
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<p>Writing Tasks</p> 	<p>Create a revision guide for a year 13 student on an A Level topic of your choice Try some of the STEP past papers https://www.admissionstesting.org/for-test-takers/step/about-step/</p>
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<p>Creative Thinking Tasks</p> 	<p>Try some of the Senior Maths Challenge puzzles on the UKMT website. Research the Millenium Problems Try the weekly Kings Maths School problem: https://www.kingsmathsschool.com/weekly-maths-challenge Take part in the University of Southampton's Cipher Challenge Research the Golden Gate Bridge and how the curvature of the Earth changes its structure.</p>
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SUPER CURRICULUM

Visiting/Virtual
Visiting
Tasks



Visit the Mechanical Art and Design museum in Stratford-upon-Avon <https://themadmuseum.co.uk/>

Complete the London Maths Trail

<http://www.themathszone.com/wordpress/wp-content/uploads/2012/03/Central-London-Trail.pdf>

