

## Computing & IT Supercurriculum

KS3	Book	<b>Algorithms to Live By: The Computer Science of Human Decisions.</b> A fascinating exploration of how computer algorithms can be applied to our everyday lives.
	Trips & Visits	<b>Centre of Computing History</b> Plan a visit to the Centre of Computing History Rene Court, Coldhams Road, Cambridge, CB1 3EW <a href="http://www.computinghistory.org.uk/">http://www.computinghistory.org.uk/</a>
	Watching Tasks	<b>Where it all started</b> Watch the TedTalk on The birth of the computer.   George Dyson <a href="https://www.youtube.com/watch?v=EF692dBzWAs&amp;index=1&amp;list=PLF7032F8EB1A4F9E2">https://www.youtube.com/watch?v=EF692dBzWAs&amp;index=1&amp;list=PLF7032F8EB1A4F9E2</a>  <b>Map of Computer Science.</b> A fantastic short video summarising the field of computer science.  <a href="https://www.youtube.com/watch?v=SzJ46YARaA">https://www.youtube.com/watch?v=SzJ46YARaA</a>
	Listening Tasks	<b>The story of computing</b> This Guardian blog talks about the Computing universe and the evolution of computers. <a href="https://www.theguardian.com/science/audio/2015/jan/30/computing-universe-science-weeklypodcast">https://www.theguardian.com/science/audio/2015/jan/30/computing-universe-science-weeklypodcast</a>
	Writing Tasks	<b>No more teachers</b> Write a short essay debating the following question - Will computer assisted education replace the need for teachers in the future?
	Research Tasks	<b>Where could Computer Science take you?</b> Carry out some research to find out about some unusual careers with the tech and Computer Science industry. Digital locksmith? Drone operator? Professional hacker?
	Creative tasks	<b>Computer Science Fundamentals</b> A collection of interactive quizzes that will help you master computer science fundamentals. <a href="https://brilliant.org/courses/computer-science-fundamentals/">https://brilliant.org/courses/computer-science-fundamentals/</a>
	Student led tasks	<b>Bebras</b> Check out some of the brilliant computational thinking challenges and develop your problem solving skills at <a href="http://www.bebas.uk/">http://www.bebas.uk/</a>

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KS4	Book	<p><b>The Register</b> The Register (nicknamed El Reg) is a British technology news and opinion website. Keep up to date by subscribing and reading news articles regularly. <a href="https://www.theregister.co.uk/">https://www.theregister.co.uk/</a></p>
	Trips & Visits	<p><b>Bletchley Park</b> Plan a visit to the home of codebreaking at Bletchley Park – The Mansion, Bletchley Park, Sherwood Drive, Bletchley, Milton Keynes, MK3 6EB <a href="https://bletchleypark.org.uk/">https://bletchleypark.org.uk/</a></p>
	Watching Tasks	<p><b>Making all knowledge computational</b> Watch the TedTalk on Computing a theory of everything   Stephen Wolfram <a href="https://www.youtube.com/watch?v=60P7717-XOQ&amp;index=5&amp;list=PLF7032F8EB1A4F9E2">https://www.youtube.com/watch?v=60P7717-XOQ&amp;index=5&amp;list=PLF7032F8EB1A4F9E2</a></p> <p><b>BBC Click</b> Watch this weekly BBC television programme covering news and recent developments in the world of consumer technology and innovations. <a href="http://www.bbc.co.uk/programmes/b006m9ry/episodes/player">http://www.bbc.co.uk/programmes/b006m9ry/episodes/player</a></p>
	Listening Tasks	<p><b>The story of computing</b> This Guardian blog talks about the Computing universe and the evolution of computers. <a href="https://www.theguardian.com/science/audio/2015/jan/30/computing-universe-science-weeklypodcast">https://www.theguardian.com/science/audio/2015/jan/30/computing-universe-science-weeklypodcast</a></p>
	Writing Tasks	<p><b>Artificial Intelligence</b> Write a short essay debating the following question - Will Artificial Intelligence Replace Mankind?</p>
	Research Tasks	<p><b>The Internet of Things</b> Probably the most pervasive trend is the Web of Things, where just about everything we interact with becomes a computable entity. Research how future developments in this area may change or revolution</p>
	Creative tasks	<p><b>CyberFirst</b> Get hands on with Cyber Security course run by GCHQ. They offer a variety of residential and non-residential courses. <a href="https://www.gchqcareers.co.uk/earlycareers/cyberfirst.html">https://www.gchqcareers.co.uk/earlycareers/cyberfirst.html</a></p>
	Student led tasks	<p><b>Build your own</b> Looking to purchase a new computer or laptop? Well, instead your challenge is to build your own! Purchase components separately to piece together in creating your own system.</p> <p>Python Develop your Python programming skills by challenging yourself to complete as many tasks on Snakify as you can. <a href="https://snakify.org/">https://snakify.org/</a></p>

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KS5	Book	<p><b>How Google works (Eric Schmidt and Jonathan Rosenberg)</b>How Google Works shines a light on the hiring and operating processes of Google, which have enabled it to come up with great products continuously and stay visionary.</p>
	Trips & Visits	<p><b>The National Museum of Computing</b></p> <p>Plan a visit to The National Museum of Computing - Bletchley Park MILTON KEYNES MK3 6EB <a href="http://www.tnmoc.org/">http://www.tnmoc.org/</a></p>
	Watching Tasks	<p><b>Mysteries of the mind can be solved</b> A brain in a supercomputer   Henry Markram <a href="https://www.youtube.com/watch?v=LS3wMC2BpxU&amp;index=10&amp;list=PLF7032F8EB1A4F9E2">https://www.youtube.com/watch?v=LS3wMC2BpxU&amp;index=10&amp;list=PLF7032F8EB1A4F9E2</a></p> <p><b>Big Data</b> Watch the TedTalk on The year open data went worldwide   Tim BernersLee <a href="https://www.youtube.com/watch?v=3YcZ3Zqk0a8&amp;list=PLF7032F8EB1A4F9E2&amp;index=20">https://www.youtube.com/watch?v=3YcZ3Zqk0a8&amp;list=PLF7032F8EB1A4F9E2&amp;index=20</a></p>
	Listening Tasks	<p><b>Spark</b> is an ongoing conversation about our rapidly changing world. Along with you, host Nora Young explores how technology, innovation and design affects our lives. <a href="http://www.cbc.ca/radio/spark">http://www.cbc.ca/radio/spark</a></p>
	Writing Tasks	<p><b>Quantum Computing</b> Shor's Algorithm focusses on quickly factorising numbers into primes. Write a short essay summarising how the birth of quantum computing allowed for efficient integer factorisation.</p>
	Research Tasks	<p><b>Machine learning</b> Research the limits of machine learning and what the future holds? Will machines take our jobs? Why did Elon Musk and Mark Zuckerberg have a public spat about it? Why is Google investing so heavily in it? Check out where Google is taking it next <a href="https://youtu.be/gmWlf5sINEc">https://youtu.be/gmWlf5sINEc</a></p>
	Creative tasks	<p><b>Programming Throwdown</b> offers a general introduction to a wide range of programming-related topics in an interesting and engaging manner. <a href="http://www.programmingthrowdown.com/">http://www.programmingthrowdown.com/</a></p>
	Student led tasks	<p><b>MOOCs</b> Why not take one of the many online courses delivered by some of the best teachers/schools to further your Computing Skills. Topics range from AI to security to big data. Some courses can even count as credits towards a degree! Check out the list at <a href="http://learnict.it/great-moocs-for-alevel-students/">http://learnict.it/great-moocs-for-alevel-students/</a></p>