

### Computer Science Supercurriculum

KS3	Books	<p><b>Computational Fairy Tales by Jeremy Kubica.</b> A romp through the principles of computational thinking, illustrating high-level computer science concepts, the motivation behind them, and their application.</p>
	Trips & Visits	The Big Bang Fair, Centre for Computing History (Cambridge), Science Museum (Information Age)
	Watching Tasks	George Dyson: The birth of the computer: <a href="https://www.youtube.com/watch?v=EF692dBzWAs">https://www.youtube.com/watch?v=EF692dBzWAs</a>
	Writing Tasks	Intelligent Machines. Write a short essay debating the following question – Are computers more intelligent than the people who make them?
	Research Tasks	Where could Computer Science take you? Carry out some research to find out about some unusual careers with the tech and Compute Science industry. Digital locksmith? Drone operator? Professional hacker?
	Creative tasks	Create your own website Use this Codecademy tutorial to develop your skills using HTML and CSS to build your own website. <a href="https://www.codecademy.com/courses/web-beginner-enHZA3b/0/1">https://www.codecademy.com/courses/web-beginner-enHZA3b/0/1</a>
	Student led tasks	Computer Science Fundamentals. 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>

KS4	Books	<p><b>Computational Fairy Tales by Jeremy Kubica.</b> A romp through the principles of computational thinking, illustrating high-level computer science concepts, the motivation behind them, and their application.</p>
	Trips & Visits	Bletchley Park, Centre for Computing History (Cambridge)
	Watching Tasks	BBC Click 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>
	Listening Tasks	The story of computing 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	Artificial Intelligence Write a short essay debating the following question - Will Artificial Intelligence Replace Mankind?
	Research Tasks	The Internet of Things 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
	Creative tasks	Build your own 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.
	Student led tasks	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>  SQL Use these Khan Academy tutorials to learn how to use SQL to store, query, and manipulate data. <a href="https://www.khanacademy.org/computing/computerprogramming/sql">https://www.khanacademy.org/computing/computerprogramming/sql</a>

KS5	Books	<p><b>Code: The Hidden Language of Computer Hardware and Software by Charles Petzold.</b> Using everyday objects and familiar language systems such as Braille and Morse code, author Charles Petzold weaves an illuminating narrative for anyone who's ever wondered about the secret inner life of computers and other smart machines.</p> <p>Computer Science: An Overview by J. Glenn Brookshear</p> <p>Code: The Hidden Language of Computer Hardware and Software by Charles Petzold Out of Their Minds by D Shasha and Cathy Lazere</p> <p>The Pattern on the Stone: The Simple Ideas That Make Computers Work by Daniel Hillis The Information: A History, a Theory, a Flood by James Gleick</p>
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	Trips & Visits	Bletchley Park
	Watching Tasks	<p>Big Data</p> <p>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>Programming Throwdown 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>
	Writing Tasks	<p>Quantum Computing</p> <p>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>No Touch Interfaces</p> <p>Forbes ranks no touch interfaces within the top five trends that will drive the future of technology. What can you find out about no touch interfaces? How may they benefit future technological developments?</p>
	Creative tasks	<p>Project Euler</p> <p>Test your problem solving and computational thinking skills through a series of challenging mathematical/computer programming problems <a href="http://projecteuler.net/">http://projecteuler.net/</a></p>
	Student led tasks	<p>Advanced JavaScript</p> <p>Use these Khan Academy to combine JS, and mathematical concepts to simulate nature in your programs <a href="https://www.khanacademy.org/computing/computerprogramming/programmingnatural-simulations">https://www.khanacademy.org/computing/computerprogramming/programmingnatural-simulations</a></p>