

SUPER-CURRICULAR OPPORTUNITIES

Subject	Key Stage Three	KS3 Book/Broadcast /Competition	Pre GCSE/GCSE	GCSE Book/Broadcast /Competition	Post-16	Post-16 Book/Broadcast/Competition	Websites / Virtual Tours
Computer Science	<ul style="list-style-type: none"> Students learn two text based programming languages Python – a high level language (free download of IDE called IDLE) Small basic (free download from Microsoft) Scratch (free download from MIT or use of online resource) Student also learn scripting languages Javascript – www.codeacademy.com or www.codecombat.com HTML and CSS as above BBC Microbit opportunities https://www.micro 	<ul style="list-style-type: none"> BBC Bitesize webpages KS3 ICT - BBC Bitesize Teach-ICT Computer Science learning for school students KIDS REACT TO OLD COMPUTERS - YouTube <p>Watch the Imitation Game movie to learn about the Enigma code.</p> <p>Podcast on Science and Technology BBC World Service - World Wise Web - Downloads</p> <p>Books: Computational Fairy Tales by Jeremy Kubica.</p>	<ul style="list-style-type: none"> Keep up to date with the social impact of ICT – BBC technology pages Research the impact of Alan Turing on the development of computing. Why is he important? Research different types of interface - where are they needed? Download Little man computer – run practical activities Practice programming skills Number based conversion systems – Binary- Hex – Octal etc. Understanding computer networks What are the dangers of databases? Make a list of all the 	<ul style="list-style-type: none"> 2001: A Space Odyssey (1968) The Net(1995) Enemy of the state (1998) – state monitoring of private communications A.I. Artificial Intelligence (2001) Watch 'Click' on BBC News channel <p>Ted talks on Technology: TED Talks</p> <p>Books: The Pattern on the Stone: the Simple Ideas that make Computers Work by W Daniel Hills.</p>	<ul style="list-style-type: none"> Understand the basics of computational thinking Research different types of data transmission Practice Boolean algebra Who was Edsger Dijkstra? Why is he important? Who is Charles Richardson Hoare? Why is he important? Research algorithmic sorting Assembly languages — Isaac Computer Science <p>Create low level code using LMC which operates a simple program. Generate LMC code from a simple high-level program you have created in Java.</p>	<p>Documentaries:</p> <ul style="list-style-type: none"> The Code-Breakers (2006) Steal This Film (2006) Hackers Are People Too (2008) Hackers Wanted (2010) The Virtual Revolution (2010) Code - Breakers, Bletchley Park's Lost Heroes (2011) We Are Legion (2012) DEFCON: The Documentary (2013) The Internet's Own Boy: The Story of Aaron Swartz (2014) 	<p>HM Government's Cyber Schools Programme</p> <p>The free programme that empowered over 100,000 young people to try cyber security Cyber Discovery: HM Government's Cyber Schools Programme (joincyberdiscovery.com)</p> <p>Cyberthreats Emerging Cyberthreats Norton Internet Security Center</p> <p>Cisco Networking courses Cisco Networking Academy. Build your skills today, online. It's Free - Cisco</p> <p>Learn Java Java Tutorial (w3schools.com)</p> <p>Work with XML documents</p>

	bit.co.uk/teachers-and-parents Visit the Museum of Technology in Hertfordshire to look at the technological revolution since the 1850s		databases you appear on. • Search for logic gates online and complete activities • Practice some Python techniques on HackerRank Activities Classic CS Unplugged • Write a short essay debating the following question – is technology increasing people's quality of life?		• visualising data structures and algorithms through animation - VisuAlgo Compare common algorithms and data structures by researching the differences between the ways they operate. Using Big-O to compare efficiency.		Semantic Web - W3C Learn Programming Language C++ Tutorial (w3schools.com) Create a webpage using PHP PHP Tutorial (w3schools.com)
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