Computer Science Super Curricular Activities

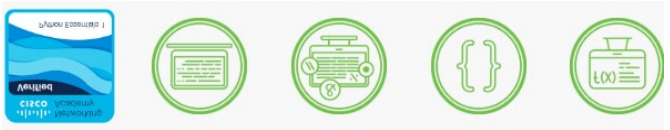
KS3

Please update the Form on the School website to record the Super-curricular activity you have completed

Read	Watch/Listen
Quick read: using peer instruction to discuss computing concepts (https://teachcomputing.org/blog/quick-read-4-peer-instruction) Pick Parts. Build your PC compare and share (https://pcpartpicker.com/) Everything we know about Facebook's Secret Mood Manipulation Experiment https://www.theatlantic.com/technology/archive/2014/06/everything-we-know-about-facebooks-secret-mood-manipulation-experiment/373648/	▪ **Introduction to Algorithms** (MIT OpenCourseWare ▪ Google Data Center 360° Tour (https://youtu.be/zDAYZU4A3w0?si=c5oh_l63mlDFxRJD) Impacts of Technology ▪ What is Open Source explained in LEGO (https://youtu.be/a8fHgx9mE5U?si=YdV1pJihFF0CzcP9)
Visit	**Create/Explore**
The Science Museum (Exhibition on Computing and Tech) ▪ Located in South Kensington. ▪ Has a dedicated section for computing history, including early computers, interactive tech exhibits, and innovations in AI and robotics. ▪ Great for understanding the evolution of computer science.	Introduction to Modern AI (Learn to use AI in your daily life, craft effective prompt chatbots, and use computer vision and machine translation.) 6 hours | Beginner | Self-Paced | Achievements Cisco Introduction Modern AI Badge https://www.netacad.com/courses/introduction-to-modern-ai?courseLang=en-US Module 1: Introduction to Modern AI ▪ AI, Machine Learning and Models ▪ Computer Vision ▪ Machine Translation ▪ Chatbots Overview ▪ Ways to use Chatbots ▪ Generative AI and Other Vocabulary Words Module 2: Open End Project

KS4

Read	Watch/Listen
Research & Theory ▪ Explore algorithm design (try implementing sorting algorithms) ▪ Study logic gates and Boolean algebra ▪ Learn about Turing Machines or the Halting Problem ▪ Read Turing's original papers or summaries	▪ Stay informed on current trends: ▪ Podcasts: *The Vergecast*, *Darknet Diaries*, *Lex Fridman Podcast* ▪ Blogs: Paul Graham (Y Combinator), Joel Spolsky, Coding Horror ▪ News: Ars Technica, Wired, Hacker News
Visit	**Create/Explore**
The Alan Turing Institute ▪ The UK's national institute for data science and AI. ▪ Located at the British Library in King's Cross. ▪ Sometimes offers talks, workshops, and events on cutting-edge research in computer science. Tech Meetups and Conferences ▪ London hosts many tech meetups and conferences throughout the year (e.g., London Tech Week). ▪ Check websites like Meetup.com or Eventbrite for computer science and programming events during your visit.	Doing actual coding shows applied skill. ▪ Build small games, apps, or tools (GitHub portfolio is a plus) ▪ Contribute to open-source projects (GitHub, GitLab) ▪ **Advent of Code** – annual programming puzzles ▪ **Hackathons** – online or in-person (e.g. Major League Hacking) ▪ **Google Code Jam**, **Codeforces**, **AtCoder**, **LeetCode**, **HackerRank** Exploring Networking with Cisco Packet Tracer www.netacad.com/courses/packet-tracer Python Essentials 1 This course is part of the Learning Collections - Python Learn fundamental concepts of computer programming and start building coding skills with the Python programming language. Free | Duration: 30 hours |n Beginner | Self-Paced | Achievement Badges

	Python Essentials 1, Introduction to Python and Programming, Data Types, Variables, and Basic I/O, Control Flow and Lists, Collections, Functions, and Exceptions  https://www.netacad.com/courses/python-essentials-1?courseLang=en-US What you will learn: PE1: Module 1: Introduction to Python and Computer Programming PE!: Module 2: Python Data Types, Variables, Operators, and Basic I/O PE1: Module 3: Boolean Values, Conditional Execution, Loops, Lists PE1: Module 4: Functions, Tuples, Dictionaries, Exceptions, and Data