POST GCSE ENRICHMENT / READING LIST

Programming

Python Coding Club

- ☐ Level 1 – Python Basics - ISBN 978-1-107-65855-4
- ☐ Level 2 – Python: Next Steps ISBN 978-1-107-62325-5
- ☐ Level 3 – Python: Building Big Apps ISBN 978-1-107-66687-0

Python Challenges https://zigzageducation.co.uk/synopses/5688-python-3-challenges-for-ks3-ks4?pod=5688

☐ Challenge 1	☐ Challenge 2	☐ Challenge 3	☐ Challenge 4
☐ Challenge 5	☐ Challenge 6	☐ Challenge 7	☐ Challenge 8
☐ Challenge 9	☐ Challenge 10	☐ Challenge 11	☐ Challenge 12
☐ Challenge 13	☐ Challenge 14	☐ Challenge 15	☐ Challenge 16
☐ Challenge 17	☐ Challenge 18	☐ Challenge 29	☐ Challenge 20
☐ Challenge 21	☐ Challenge 22	☐ Challenge 23	☐ Challenge 24
☐ Challenge 25	☐ Challenge 26	☐ Challenge 27	☐ Challenge 28
☐ Challenge 29	☐ Challenge 30		

Python in Easy Steps – ISBN 978-1840785968

☐ 1. Getting Started	☐ 2. Performing Operations	☐ 3. Making Statements
☐ 4. Defining Functions	☐ 5. Importing Modules	☐ 6. Managing Strings
☐ 7. Programming Objects	☐ 8. Processing Requests	☐ 9. Building Interfaces
☐ 10. Developing Application		

Learn to program with Python in 150 challenges - ISBN 9781108637947

☐ The Basics – Challenges 1 to 11	☐ If statements – Challenges 12 to 19
☐ Strings – Challenges 20 to 26	☐ Maths – Challenges 27 to 34
☐ For Loops – Challenges 35 to 44	☐ While Loops – Challenges 45 to 51
☐ Random – Challenges 52 to 59	☐ Turtle Graphics – Challenges 60 to 68
☐ Tuples, Lists & Dictionaries – Challenges 69 to 79	
☐ More string manipulation – Challenges 80 to 87	
☐ Numeric Arrays – Challenges 88 to 95	☐ 2D Lists & Dictionaries – Challenges 96 to 104
☐ Reading and writing to a text file – Challenges 105 to 110	
☐ Reading and writing to a .csv file – Challenges 111 to 117	
☐ Functions – Challenges 118 to 123	☐ TKinter GUI – Challenges 124 to 132

Programming by Doing – Learn to program with Java

https://programmingbydoing.com/

Use compiler if not able to install Java: https://www.tutorialspoint.com/compile_java_online.php

☐ The Basics and Printing – Assignments 0 to 8	☐ Graphics – Assignments 77 to 96
☐ Variables – Assignments 9 to 13	☐ Functions – Assignments 97 to 118
☐ Keyboard Input – Assignments 14 to 20	☐ Nested Loops – Assignments 119 to 127
☐ If statements – Assignments 21 to 28	☐ File Input & Output – Assignments 128 to 137
☐ GUIs – Assignments 29 to 40	☐ Arrays – Assignments 138 to 153
☐ Random Numbers – Assignments 41 to 47	☐ Sorting – Assignments 154 to 162
☐ While Loops – Assignments 48 to 55	☐ Records – Assignments 163 to 175
☐ Do-While Loops – Assignments 56 to 63c	☐ Objects – Assignment 176
☐ For Loops – Assignments 64 to 75	☐ Array Lists – Assignments 177 to 192
☐ Project BlackJack – Assignment 76	☐ Project Euler – Assignments 193 to 224
☐ If statements – Assignments 21 to 28	

Read

Books

- ☐ *Lauren Ipsum: A story about computer science and other improbable things- Carlos Bueno – ISBN 9781593275747*
- ☐ *Computational Fairy Tales – Jeremy Kubica – ISBN 9781477550298*
- ☐ *Best Practices of Spell Design: A Computational Fairy Tale – Jeremy Kubica – ISBN 9781481921916*
- ☐ *Algorithms to Live By: The Computer Science of Human Decisions - Brian Christian and Tom Griffiths – ISBN 9781627790369*
- ☐ *Superintelligence: Paths, Dangers, Strategies - Nick Bostrom – ISBN 9780199678112*
- ☐ *Hackers: Heroes of the Computer Revolution – Steven Levy – ISBN 9781449388393*
- ☐ *Code – Charles Petzold – ISBN 9780735611313*
- ☐ *The Second Machine Age – Erik Brynjolfsson and Andrew McAfee – ISBN 9780393350647*
- ☐ **The Innovators – Walter Isaacson – ISBN 9781471138805**

Magazines

CS4FN – All downloadable from: https://cs4fndownloads.wordpress.com/

☐ Issues 1 to 26			
☐ Annual Issue 1 & 2			
☐ Computational Thinking Puzzles 1		☐ The Magic of Computer Science Book 1	
☐ Computational Thinking: Searching to Speak		☐ The Magic of Computer Science Book 2	
☐ Computational Thinking: Puzzling Tours		☐ The Magic of Computer Science Book 3	
☐ Computational Thinking; HexaHexaFlexagon Automata			☐ Biology Loves
☐ Manual of Mathematical Magic			
☐ Audio Issue 1	☐ Audio Issue 2	☐ Audio Issue 3	☐ Audio Issue 4
☐ Biology Loves Technology		☐ Teaching Science Through Mystery	

MagPi – All downloadable from: https://magpi.raspberrypi.org/issues?page=1

☐ Issues 1 to 92

HackSpace – All downloadable from: https://hackspace.raspberrypi.org/issues

☐ Issues 1 to 29

Wireframe – All downloadable from: https://wireframe.raspberrypi.org/issues

☐ Issues 1 to 35

Hello World – All downloadable from: https://helloworld.raspberrypi.org/issues

☐ Issues 1 to 12

Custom PC – All downloadable from: https://custompc.raspberrypi.org/issues?page=1

☐ Issues 187 to 200

Watch / Listen

Youtube

Crash Course Channel Computer Science Playlist:
https://www.youtube.com/playlist?list=PL8dPuuaLjXtNlUrzyH5r6jN9ulIgZBpdo

Crash Course Channel Artificial Intelligence Playlist:
https://www.youtube.com/playlist?list=PL8dPuuaLjXtO65LeD2p4_Sb5XQ51par_b

Computerphile Channel all videos:
https://www.youtube.com/user/Computerphile/playlists

Microsoft Channel all videos (especially Quantum Impact):
https://www.youtube.com/user/Microsoft/playlists

This Week in Tech Channel all videos:
https://www.youtube.com/user/ThisWeekinTech

Tech News Weekly Channel all videos:
https://www.youtube.com/user/TWiTTechNews

MITCSAIL Channel all videos:
https://www.youtube.com/user/MITCSAIL

RECODE Channel all videos:
https://www.youtube.com/channel/UCMDxbhGcsE7EnknxPEzC_Iw

Podcasts

Available on Spotify, Stitcher, Himalaya or most other podcast directories

- ☐ Artificial Intelligence with Lex Fridman
- ☐ Computing Britain
- ☐ DeepMind: The Podcast
- ☐ Hackable
- ☐ Digital Human
- ☐ TwiT

Television Programmes

Available on various TV players, Netflix, Amazon or YouTube

BBC Click - iPlayer	Dark Net - Netflix	Inside Bill's Brain - Netflix	Silicon Valley - Amazon
Follow This - Netflix	Humans – Channel 4	How to Build a Human – Channel 4	
Halt & Catch Fire - Amazon	Valley of the Boom	Tech Talk - Amazon	Startup - Amazon
James May – Our man in Japan - Amazon		The Latest in Tech - Amazon	How Tech Works - Amazon
Mr Robot - Netflix	Westworld - Amazon	Scorpion - Netlix	Altered Carbon - Netflix

Movies and Documentaries

Available across many different platforms

Documentaries			Movies	
The Great Hack	Steve Jobs: Billion Dollar Hippy		iRobot	Artificial Intelligence
The Internet's Own Boy	Indie Game: The Movie		The Social Network	Ex Machina
Terms and Conditions May Apply	Jobs Vs Gates		Transcendence	Ready Player One
History of Computing	Deep Web		2001 A Space Odyssey	Blade Runner
Silicon Cowboys	We Are Legion		Alita: Battle Angel	The Imitation Game
Citizenfour	Bitcoin: The End of Money as We Know It		Bombshell: Hedy Lamar	Terminator (series)