A-level computer science

Task 1: Summer Reading List

This is not an exhaustive list, and it is not the intention that you would read every book. However, try to look at one or two; many should be available from public libraries.

Computational Fairy Tales by Jeremy Kubica. ISBN: 978-1477550298 (an interesting approach to some core computer science ideas!)

Code: The Hidden Language of Computer Hardware and Software by Charles Petzold. ISBN: 978-0735611313

The Code Book by Simon Singh. ISBN: 978-1857028898

The New Turing Omnibus by A Kee Dewdney. ISBN: 978-0805071665 (quite advanced and mathematical)

Algorithmic Puzzles by Anany Levitin and Maria Levitin. ISBN: 978-0199740444 (discusses a number of problem solving algorithms and then presents you with a number of different puzzles to solve)

Mindstorms by Seymour Papert ISBN: 978-0465046744

Alan Turing: The Enigma by Andrew Hodges ISBN: 978-1784700089

Brown Dogs and Barbers by Beecher, Karl (2014) ISBN: 978-3000470578

Algorithms to live by: the computer science of human decisions. Christian and Griffiths, 2016 ISBN: 978-0007547999 (interesting look at everyday decisions and the algorithms that can be used to define the optimum outcomes)

Ghost In The Wires: My Adventures as the World's Most Wanted Hacker by Kevin Mitnick and William Simon ISBN 978-0316212182

Task 2: Learn a(nother programming) language

Start to learn another programming language, if you haven't already. C++ and Java make an interesting contrast to Python and will introduce you to the idea of object oriented programming. Most languages offer free downloads as part of comprehensive IDE packages. I do not have extensive experience, but here are a few that I have used:

Windows: C++ - Code Blocks
Windows: Java - Eclipse
Mac: C++ - Xcode
Mac: Java - Netbeans

If you don't want to download an IDE, you can use a simple text editor for most languages as long as you have the compiler installed. There are also on-line IDEs that support these languages such as repl.it.

Task 3: Start to think about your project

A-level computer science contains a project worth 20% of your final qualification. Unlike GCSE, where the tasks are set by the exam board, you decide on the project that you want to do. However, the project needs to be sufficiently complex for you to show your skills in order to earn the marks.
OCR have published a guide that helps you assess what types of projects will be acceptable.

http://www.ocr.org.uk/Images/324587-project-setting-guidance.pdf

Please read through the guide and start to think about what you might be able to do, and how you will acquire the skills required to be successful.