

# Summer Work – Transition from Year 11 to Year 12

A Level Subject:

Computer Science

Teacher name and Contact Email:

Matthew taylor

m.taylor@fakenhamacademy.org

Required textbook:

N/A

Useful sources:

OCR Computer Science specification - [AS and A Level - Computer Science - H046, H446](https://www.ocr.org.uk/qualifications/as-and-a-level/computer-science-h046-h446-from-2015/specification-at-a-glance/)

Issac Computing - [Isaac Computer Science](https://isaaccomputerscience.org/)

ADA computer science - [English qualifications — Ada Computer Science](https://adacomputerscience.org/exam_specifications_england#a_level/ocr)

101 computing - [Welcome - 101 Computing](https://www.101computing.net/)

Craig n Dave YouTube channel - [Craig'n'Dave - YouTube](https://www.youtube.com/%40craigndave)

Equipment List:

Access to a computer

# Tasks

I. Research Topics

These questions require you to use your technical knowledge in context (**pick one**). You will need to do some research to extend your knowledge and provide relevant examples. Reference any sources that you use to help you – there is a guide to referencing at the bottom of the page.

1. Create a timeline showing the history of computing, including any key discoveries or inventions. Extend you timeline to show how you think computer science might develop over the next 50 years.

2. Compare the Xbox ONE, PS4 Pro and PC as gaming platforms. You must use as much technical detail as possible and reference any evidence presented. Choose how you will present your ideas.

 3. Discuss the benefits and limitations of Virtual Reality

* a. In business contexts, such as medicine
* b. As a gaming tool
* c. As an extension to social media
* d. As a tool for education

4. There have been many recent high-profile cyber-attacks across the world and some commentators have said that “we now rely too much on technology” . Write an essay explaining how far you agree with this statement, including descriptions of threats to IT systems and ways to reduce vulnerabilities.

A guide to the Harvard referencing style can be found here: <https://www2.le.ac.uk/library/help/referencing/author-date>

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II. Puzzles and Problem-Solving : Logic Puzzles

 The following puzzle requires you to think logically and systematically. You will need to list the steps/ deductions you made in solving the puzzle.

 A deduction puzzle:

There are four programmers, each of whom codes in a different language and has their own reason for studying computer science. Can you use the clues provided to match each programmer to the correct programming language and motivation for studying computer science?

1. Of the one who likes puzzles and the one who loves maths, one is Alice and the other programs in C.

2. The python programmer’s name is alphabetically one more than the person who enjoys solving puzzles

3. Bob got into computer science through gaming

4. Of Dave and Bob, one wants to study computer science for the money, while the other codes in VB

 Lots more of this style of puzzle, including interactive solving tools, can be found here: <http://www.logic-puzzles.org/index.php>