Worthing College

Getting Ready For A-LEVEL COMPUTER SCIENCE

Name		
AQA A-LEVEL COMPUTER SCIENCE	**PREPARATION REQUIRED FOR A-LEVEL**	**Summer 2024**

We are delighted you have chosen to study Computer Science at Worthing College.

Instructions: This pack will help you make the best possible start to studying this subject.

The tasks in this pack:

- should take you **about 4-6 hours to complete.**
- should be handed into your teacher when teaching starts **from 9th September 2024** with your name on it for assessment.
- are also available on the internet – follow the links in the document.

If you need help: The tasks are designed to get a bit more difficult as you work through them as they are preparing you for studying at a higher level and to become an effective independent learner. You should try to get as far as you can working on your own but if you do need help, please email us at gettingreadyfor@worthing.ac.uk, telling us which Getting Ready For pack you are working on and what help you need. Help is available throughout the summer holidays.

Skills Focus for this Getting Ready for Pack	
• The ability to choose the correct method to solve a problem. • Your quality of English communication when a written answer is required. • Clarity of logical communication – how well you show your workings and lay out your work. • Ability to research a given programming language independently.	Marking and correcting your work, revising any topics you have forgotten. GCSE subject knowledge, including: • Linear Number Patterns • Digital Literacy • Understanding Algorithms • Programming Theory

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Summer work – Year 1 Computer Science			
Target Grade	**Type of task**	**Task and subject specific skill reference**	**Deadline / Evidence**
All	Research and install	**Integrated Development environment** Throughout the two years you will be studying A Level Computer Science, we will use a variety of programming languages. Our main language for the exam will be C# as this is the language that the exam board uses when writing our course content / papers and is an excellent stepping-stone to move into Higher Education. We will use Visual Studio to write programmes. Please ensure that you have downloaded a copy of the Visual Studio Community IDE onto your own computer, which for this purpose must be a PC running Windows. Visual Studio Download Visual Studio Community 2022 - Free IDE and Developer Tools (microsoft.com) Visit www.w3schools.com/cs and complete the first section of introductory tutorials on C# (up to and including Arrays). To create a new program in Visual Studio, firstly **Create a new Project** and then choose the **Console App** template. We shall eventually be writing Visual Forms applications, but not yet. **Program 1** Write a program for a simple guessing game. The program generates a number in the range 1 to 100. The player then must guess the number. After each try, they are told whether their answer is • Correct • Or too high • Or to low At the end of the game the player is told how many it took them to get the correct answer.	**from 9th September 2024** **Screen captures of Visual Studio on your own computer** **Code Listing and Screen capture showing your program running successfully**

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		Program 2 In the Caesar Cypher, each letter is replaced by the one n spaces ahead of it in the alphabet. Wrap around occurs at the end of the alphabet. With n=1, "A" would become "B", and "Z" would become "A" With n=2, "A" would become "C", and "Z" would become "B" Etc. Write a program which • Takes as input a string • Take as input the value of n • Converts the string to upper case • Removes all the spaces, punctuation, and digits from the string • Applies the Caesar Cypher to the string	**Code Listing and Screen capture showing your program running successfully**
All	Revision questions	**GCSE Questions** Attempt all of the questions on the GCSE paper (2018) and bring your work to your first computer science lesson: https://www.physicsandmathstutor.com/pdf-pages/?pdf=https%3A%2F%2Fpmt.physicsandmathstutor.com%2Fdownload%2FComputer-Science%2FGCSE%2FPast-Papers%2FAQA%2FPaper-2%2FJune%202018%20QP%20-%20Paper%202%20AQA%20Computer%20Science%20GCSE.pdf	**from 9th September 2024** **Answers**
Grade 7, 8 or 9 in GCSE Maths or Computer Science	Essay	**Extension Work** Watch this half hour episode from BBC Click https://www.youtube.com/watch?v=gq6xMd7seOI This essay question is similar to the theory work you will be required to undertake for the Paper 2 Legal & Ethics topic: *A company employs a team of programmers to develop software to control a fleet of box driverless cars, providing a taxi service for clients in a large city.* *Discuss a range of moral, ethical, legal and cultural issues that the programmers may need to consider whilst developing the service and that may arise during the use of the service by the public. In your answer you will be assessed on your ability to follow a line of reasoning to produce a coherent, relevant and structured response.*	**from 9th September 2024** **Essay**

Notes:

Not everyone will have studied GCSE Computer Science, however you will need to be familiar with the logic terms by the start of the course and many of these will be familiar from maths. Please indicate clearly on your work at the start whether you studied GCSE Computer Science.

Clearly label all pages with your name and arrange them in the correct order. You do not need to print the question sheets although you may choose to do so for your own records.

If you found these tasks really challenging and were not able to complete you might want to consider the BTEC Computing Course. Please ask for advice at enrolment.

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Work Experience week

All year 1 students are required to participate in a week-long work placement during their first year of study. You will be expected to locate one week's worth of work placement and submit your work experience form before October half term.

Placement Dates:

L2/L3 students on double /triple qualifications:	1 week course-specific placement, expected placement dates will be confirmed by the course leaders at the beginning of September.
Students with 2 or more single subjects:	1 week placement during the Easter holidays or w/c 23 June 2025

You can find the work experience form HERE
More information and guidance can be found HERE