St Mary Redcliffe and Temple School

St Mary Redcliffe and Temple School Sixth Form

Year 11 Into Year 12 Transition Task

Subject: Computer Science (OCR)

SMRT Sixth Form takes students from a wide range of schools who have studied a variety of GCSE syllabuses. We want to ensure that everybody is equally able to access the content of the A Level and so the following tasks give you a chance to ensure you are fully prepared.

The course is 80% written exams with two papers. The first is Computer Systems and the second in Computational thinking, algorithms and programming. The final 20% of the qualification is a programming project.

It is important to learn how to code. Over the Summer do some practice. This is a good free online tutorial https://www.w3schools.com/python/default.asp Practical coding lessons will be part of your timetabled lessons.

To ensure you are ready to fully access the A Level Syllabus you should attempt these tasks:

Task 1: Watch the videos on the topic of Binary conversions.

These videos are from GCSE but are essential to know for A level. Therefore, it is a good idea to back over them and refresh your knowledge.

https://craigndave.org/videos/ocr-gcse-j277-slr-1-2-the-units-of-data-storage/

https://craigndave.org/videos/ocr-gcse-j277-slr-1-2-converting-between-denary-and-8-bit-binary/

https://craigndave.org/videos/ocr-gcse-j277-slr-1-2-adding-two-8-bit-binary-integers/

https://craigndave.org/videos/ocr-gcse-j277-slr-1-2-binary-shifts/

Task 2: Make detailed notes on the above videos using the Cornell note taking template.

Download the Cornell note template from this link https://craigndave.org/cornell-note-taking/ There is some extra information here behind the rationale for using it.

Then use this template to make notes on the Binary videos above.

This technique of 'flipped learning' we use a lot in Computer Science.

Task 3: Complete the questions so we can find out about you and your reasons for choosing Computer Science.

In this simple task you get the opportunity to tell me your choices and reasons behind choosing to study Computer Science. Please answer all questions as best you can.

1. Why did you choose to study A level Computer Science?

2. What other courses have you chosen to study at Key Stage 5, and what made you choose this combination?

3. What are you hoping to achieve from studying Computer Science?

4. How would you describe yourself as a learner at GCSE? What skills where you good at, what areas would you like to improve on?

5. What are your other hobbies and interests outside of school? Anything related to Computing?

Task 4: Complete the research task on Emerging Computer Technology.

In this task you get to investigate any area of emerging computer technology which interests you.

You can pick any area which interests you, but examples could be:

- Artificial intelligence
- Robotics
- Automated self-driving cards
- Quantum computing

In no more than ONE side of A4 summarise the area you have chosen under the following four headings:

1. What is it?
2. What are the possible Social, Moral, Cultural and Ethical **benefits** of this technology on society
3. What are the possible Social, Moral, Cultural and Ethical **risks** of this technology on society

4. My conclusion on this technology and what it will mean for our world 10 years from now

For additional help and support in structuring your answer you might like to watch some of the videos from the following Craig 'n' Dave playlists:

OCR:
SLR 17 – Ethical, morale and cultural issues
https://student.craigndave.org/videos/slr-17-ethical-moral-and-cultural-issues

AQA:
SLR 19: Moral, social, legal, cultural issues
https://student.craigndave.org/videos/slr19-moral-social-legal-cultural-issues