St Paul's Catholic School and Sixth Form

Transition Work for Sixth Form

"Let your light shine before others." – Matthew 5:16

Sixth Form, the St Paul's way — with Christ at the heart of it all.

H446 OCR Computer Science at St Paul's Catholic School and Sixth Form

The purpose of completing the tasks below is to help you transition smoothly into A Level Computer Science. The work will give you an opportunity to reflect on important developments in computing, build your technical vocabulary, and develop key analytical skills you will use throughout the course.

After completing the tasks, your teacher will be able to assess your research, your use of terminology, and your ability to evaluate computing issues in context.

Due date: Monday 1st September 2025

Task 1	This task will allow you to research and reflect on one of the most significant global technology events: the Cambridge Analytica and Facebook data breach scandal (2018). This event helps you understand real-world issues in data ethics, privacy, and the role of technology in society.
Task 2	In this task, you are expected to become confident using technical Computer Science language in writing and discussion.
Task 3	In this final task, you will develop your research and evaluation skills by investigating a modern computing innovation that has had a significant impact on society.

This task is designed to help you understand how theoretical concepts in computing apply in real-world systems and to explore the ethical, legal, and technical challenges involved.

Specification: https://ocr.org.uk/Images/170844-specification-accredited-a-level-gce-computer-science-h446.pdf

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Task 1

This task will allow you to research and reflect on one of the most significant global technology events: the Cambridge Analytica and Facebook data breach scandal (2018). This event helps you understand real-world issues in data ethics, privacy, and the role of technology in society.

Complete each section below using your own research, class knowledge, and personal insight. You may use trusted websites, news articles, or speak with someone who remembers the period.

Brief Overview:

- What was the Facebook-Cambridge Analytica scandal?
- What happened, and how were users' data misused?
- How did this affect global conversations around data privacy and regulation?

(Write a few sentences summarising what happened.)

Speak to Someone:

- Ask a parent, carer, or relative:
- Do you remember hearing about the scandal or another big tech news story (e.g., data

leaks, online scams, social media misuse)?
- How did it affect their trust in technology, social media, or online platforms?

(Summarise their response below.)

Your Opinion:

- What do you think about the scandal and the use of personal data by large tech companies?
- Do you think stronger regulation is needed?
- What lessons can we learn as future computer scientists?

(Write your personal opinion here.)

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Task 2

In this task, you are expected to become confident using technical Computer Science language in writing and discussion.

Instructions:

1. Below is a list of key terms that you will encounter regularly in A Level Computer Science.
2. For each term, write a clear and simple definition in your own words.
3. Make sure you understand each word — don't just copy and paste a definition. You'll need to use these terms accurately in class discussions, coursework, and exams.

Define the following key terms in your own words:

1. Algorithm
2. Abstraction
3. Decomposition
4. Pseudocode
5. Data Structure
6. Boolean Logic
7. Big-O Notation
8. Denary to Binary Conversion
9. Object-Oriented Programming
10. TCP/IP Protocol Stack

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Task 3

Finally in Task 3,

In this final task, you will develop your research and evaluation skills by investigating a modern computing innovation that has had a significant impact on society.

This task is designed to help you understand how theoretical concepts in computing apply in real-world systems and to explore the ethical, legal, and technical challenges involved.

Instructions:

Choose one of the following computing innovations to research:

- Artificial Intelligence in Healthcare
- Autonomous Vehicles
- Quantum Computing
- Biometric Security Systems
- Blockchain and Cryptocurrencies
- The Internet of Things (IoT) in Smart Homes

Using reliable sources, complete the following sections with concise bullet points:

What is it?

- Briefly describe the technology and how it works.
- What area of computer science does it relate to (e.g., AI, networking, cryptography)?

Benefits:

- How does this technology benefit individuals, organisations, or society?
- Include at least 4 bullet points with specific examples.

Risks and Concerns:

- What are the possible risks, limitations, or ethical concerns?
- Consider privacy, security, bias, job displacement, etc.
- Include at least 4 bullet points.

Computing Concepts:

What programming or theoretical concepts (e.g., algorithms, data structures, machine learning, protocols) are important for this innovation?

Include at least 3 terms and briefly explain their relevance.

Success Criteria:

- Clear and structured bullet points
- At least 4 detailed points in Benefits and Risks
- At least 3 relevant computing concepts explained
- Shows understanding of real-world impact and ethical considerations
- Uses independent research (not just AI-generated text or Wikipedia)

Supporting Resources:

- https://www.bbc.co.uk/bitesize/subjects/z34k7ty (GCSE recap)
- https://www.ocr.org.uk/qualifications/as-and-a-level/computer-science-h046-h446-from-2015/
- https://www.computing.co.uk/
- https://www.ted.com/talks (search for technology topics)