



Greetings!

Welcome to AP Computer Science Principles! The AP curriculum is robust and fast-paced, so this summer assignment is designed to give us a strong head start and help set you up for success on the AP exam. That said, I vividly remember disliking summer homework when I was in high school, so I've done my best to make this assignment engaging, concise, and as painless as possible. My goal is to prepare you well while still respecting your summer break.

You'll hear me say this often throughout the year: you can absolutely cut corners if you want to. You could use AI to complete parts of this assignment, and realistically, I may never know. But doing so would miss the entire purpose. This assignment is meant to introduce you to the world of computer science, spark curiosity, and give you a foundation we can build on together during the school year. Please approach it with honesty and integrity.

Also, remember this: struggling is part of learning. In fact, some of the best learning happens when things feel challenging at first. If you hit a point where you feel stuck or overwhelmed, please do not hesitate to email me. I will always do my best to help.

The next section of this document outlines the objectives for the summer assignment. Following that, you will find the template and instructions needed to complete it. Please remember that the assignment will be due on the first day of school.

I'm looking forward to a fantastic year ahead!

Best,  
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# AP Computer Science Principles – Summer Assignment

*Estimated Time Commitment: 6-8 hours total*

## Part 1: Watch and Reflect (1-2 hours total)

Watch the following videos to begin thinking like a computer scientist. For each video, write a short reflection (3–5 sentences) in the next section explaining what you learned or found interesting. Note: we will be viewing more of these Crash Course videos throughout the school year.

1. Computer Science Preview: Crash Course CS Preview  
<https://youtu.be/tpIctyqH29Q?si=WFpF7oIBTtaZ93kG>
2. Early Computing: Crash Course CS #1  
[https://youtu.be/O5nskjZ\\_GoI?si=aimPwcEDPGbY6NOx](https://youtu.be/O5nskjZ_GoI?si=aimPwcEDPGbY6NOx)
3. Electronic Computing: Crash Course CS #2  
<https://youtu.be/LN0ucKNX0hc?si=NMK0b1W6MvwnlOLQ>
4. Boolean Logic & Logic Gates: Crash Course CS #3  
[https://youtu.be/gI-qXk7XojA?si=hmEQv\\_TLreTumcnq](https://youtu.be/gI-qXk7XojA?si=hmEQv_TLreTumcnq)
5. Representing Numbers and Letters with Binary: Crash Course CS #4  
[https://youtu.be/1GSjbWt0c9M?si=SnMjyX1H\\_osTY-yo](https://youtu.be/1GSjbWt0c9M?si=SnMjyX1H_osTY-yo)
6. How Computers Calculate – the ALU: Crash Course CS #5  
<https://youtu.be/1I5ZMmrOfnA?si=n047vvve8Nw2krEs>

## Part 2: Explore & Create (4-6 hours)

To begin introducing the concept of coding, please visit <https://blockly.games/?lang=en> and complete all the levels except the very last one, titled “Pond”. There are some levels that give you a pop-up window that says “Advance programmers only” – feel free to skip those levels if you get stuck (Maze Level 10 is an example).

Blockly Games is a website designed as an introduction to programming using visual block-based coding. The blocks of code fit like puzzle-pieces to run a set of commands. You will gain experience in commands, loops, conditionals, nested-loops, mathematical equations, functions, and problem-solving.

Please take a screenshot of your completed Blockly Games screen and paste it in the space provided in the next section of this document.

## Part 3: Research a Real-World Problem (1–2 hours)

Choose a real-world problem that interests you (e.g., climate change, cyberbullying, traffic congestion).

- Write a short paragraph (5–8 sentences) in the next section of this document describing:
  - The problem
  - How computing or technology could help solve or address it
  - Any creative ideas you have for an app, website, or innovation that could help

## How to submit your assignment

Instructions will be provided in the first day of school. Please have a PDF of this document saved and ready to be submitted.

**Part 1: Video Reflections**

*Write your 3-5 sentence reflections under the appropriate sections*

1. Computer Science Preview: Crash Course CS Preview
2. Early Computing: Crash Course CS #1
3. Electronic Computing: Crash Course CS #2
4. Boolean Logic & Logic Gates: Crash Course CS #3
5. Representing Numbers and Letters with Binary: Crash Course CS #4
6. How Computers Calculate – the ALU: Crash Course CS #5

**Part 2: Explore & Create**

*Paste a screenshot of your Blockly Games page here.*

**Part 3: Research a Real-World Problem**

*Write your paragraph here*