AP CSP – Summer Assignment Notes

# History of Computers

* What is a computer (your first thoughts – pause the video and answer this question before moving on)?
* After watching more of the video, what is a computer? Were you close?
* What is Moore’s Law?
* What is a program?

## Evidence Collection on People in Computing

### A. Charles Babbage

* Time Period:
* What did the term 'computer' mean?
* Main contribution:

### B. Ada Lovelace

* Time Period:
* What did the term 'computer' mean?
* Main contribution:

### C. Alan Turing:

* Time Period:
* What did the term 'computer' mean?
* Main contribution:

### D. Mauchly and Eckert

* Time Period:
* What did the term 'computer' mean?
* Main contribution:

### E. ENIAC Programmers

* Time Period:
* What did the term 'computer' mean?
* Main contribution:

### F. Grace Hopper

* Time Period:
* What did the term 'computer' mean?
* Main contribution:

Based on the evidence you have collected, write a one sentence summary of your conclusion to the question *Who is the inventor of the computer?*

Choose one of the following methods as evidence to support your claim:

1. **Paragraph:** In a minimum of 5 complete sentences, provide specific evidence from a variety of sources.
2. **Timeline:** Create a timeline of the development of the computer. Your timeline should highlight the impact of your chosen innovator.
3. **Concept Map:** Create a bubble map that visually shows the relationships between the different computer innovations. Your concept map should highlight the impact of your chosen innovator.

\* You may complete this in a separate document.

# Computer Organization

* What are the 2 main parts of a computer, and what do they do?
* What is an output device, and what are some examples?
* What is an input device, and what are some examples?
* What are storage devices, what are the two categories and list examples?
* What are network devices?
* What is a router?

# Software

* What is software?
* What are the two types of software?
* Which type of software interacts directly with the hardware?
* What are some examples of system software?
* What is a GUI?
* What are common OS’s?
* What is a programming language?
* List 5 computer software applications you use regularly:
* Why does your computer need an operating system? List three to five reasons.

# Hardware

* What is hardware?
* What is binary?
* What is a bit?
* How many bits in a byte?
* What are the 3 main hardware components of a computer?
* What is RAM? Does it persist after we turn off a computer?
* What is the motherboard, and what does it do?
* What is the CPU, and what does it do?
* Compare and contrast hardware and software.   
  List three to five differences.   
    
    
    
  Then, list three to five similarities.

# Future of Computing

* Today’s traditional computers use which type of architecture?
* What is meant by deterministic?
* What are the 2 types of new computers talked about?
* Summarize DNA computers:
* Summarize quantum computers:
* Answer the following questions based on the video ‘Pros and Cons of AI’:
  + What types of jobs will AI affect the most?
  + How has AI impacted the health industry?
  + What is the risk of autonomous weapons?
  + Take a Stand: Do you think computers that are controlled by an AI are something to be afraid of? Why or why not? Answer in a minimum of 5 sentences.