Invitation to Computer Science	**Chapter 1**	**Name: _____**

Key Terms

Computer Science:

Sequential Operations:

Conditional Operations:

Iterative Operations:

Key Ideas

Misconceptions of computer science:

Who is considered as the first computer programmer?

Reflection/Notes/Questions

The text talked briefly about algorithms; think of some algorithms you use every day and list them here:

What is your idea of Computer Science?

Thoughts/notes:

CS50 AP: Understanding Technology	Hardware	Computers and Computing

Key Terms

Computer:

Computing:

Input:

Output:

Algorithm:

Programming:

Computational Process:

Hardware:

Software:

Operating System:

CPU:

Key Ideas

What characteristics define a computer?

Do computers necessarily need electricity to be considered computers? Why/why not?

Reflection/Notes/Questions

Think specifically about passive computing. What types of things might you do that don't involve you actively using a computer, but still might be considered computing.

Is it still considered computing if you get the wrong answer? What are the essential components of computing and computation?

Thoughts/notes:

CS50 AP: Understanding Technology	Hardware	How Computers Work / Memory

Key Terms

Bit:

RAM:

HDD:

SSD:

Peripherals:

Bus:

Heatsink:

Key Ideas

How is it that your computer knows to display words on your screen instead of playing music?

What are some of the common ports on computers and what do they do?

What is the key thing that the operating system (OS) does for you?

Reflection/Notes/Questions

Are there different layers of hardware? What makes up these layers, and how do they interact?

Thoughts/notes:

CS50 AP: Understanding Technology	Hardware	Memory

Key Terms

Memory:

Cache:

Volatile:

Non-volatile:

Key Ideas

What is the largest type of memory?
Smallest?

How much memory does a 32-bit CPU have?
64-bit?

Reflection/Notes/Questions

What are some of the tradeoffs when considering types of memory?

Through all of this unit, you have probably heard a lot about abstraction; what exactly is abstraction?

Thoughts/notes:

CS50 AP: Understanding Technology	Hardware	Transistors and Logic / CPU and SoC

Key Terms

Transistor:

Semiconductor:

True:

False:

Boolean Logic:

Core:

Hyperthreading:

Motherboard:

SoC:

Key Ideas

In Boolean logic, how are the values represented?
What are the relative voltages that go along with those values?

What are the 3 main types of gates/circuits?

Reflection/Notes/Questions

What is Moore's law and how does it affect computer science? (you may have to search online for this answer)

Thoughts/notes:

CS50 AP: Understanding Technology	Internet	

Key Terms

IP:

DHCP:

DNS:

Packets:

TCP/IP:

Protocols:

UDP:

Router:

Key Ideas

What is the major difference between UDP and TCP?

Reflection/Notes/Questions

Briefly describe how the internet works in your own words.

Thoughts/notes:

CS50 AP: Understanding Technology	Multimedia	

Key Terms

MIDI:

File formats for recorded music:

RGB:

Lossy compression:

Lossless compression:

Image file formats:

Video file formats:

Key Ideas

Of the audio file formats you listed above, which are compressed?
Which are uncompressed?

Can you really 'enhance' images like they do on TV? Why or why not?

Describe how video compression works.

What is the difference between Virtual and Augmented Reality

Reflection/Notes/Questions

Thoughts/notes: