Summer Assignment for AP Computer Science Principles 2023-24

(with Dr. Boser, (boserk@maryvale.com**)**

1. Do some **Basic Coding**—especially if you've never done any coding or its been a long time—you'll want to do a basic tutorial. You will need to learn the basics of at least two languages for this course. You can make something in scratch or code.org or khan academy if you want to start simple or--Try the free **codeHS** curriculum https://codehs.com/course/6166/overview (in javascript) and the python version https://codehs.com/course/apcsp_py/overview (python version). Submit a simple program that will take user- input and return a calculation (your choice). You can send a shared link via http://Repl.it or http://trinket.io --you can create accounts for these online coding IDEs using your Maryvale gmail and both have basic coding tutorials. Email me with questions

2. Learn/Read about the **AP exam requirements(college board)**. There is a multiple choice and a portfolio project (create task) component. **Take the practice test** in the handbook to see what you know already. Find out more about what you will be learning. AP CSP Description and Handbook or Khan Academy

3. **Read a book about the impact of computer science** on our world or check out wired or other tech podcasts; magazines—hello world by hannah fry or BlowntoBits (click either to read for free)--readings from these books will be assigned with questions you need to answer in first months of class.

4. **GET** inspired. Watch some great videos about AND about Women in Technology Netflix has "Coded Bias "and lots of great choices –see also youtube –code: gender bias The Gender Gap in STEM | Nicole Serrano | TEDxYouth@CPS

Reflect on what you're learning.

MORE details and links for learning:

1. Learning About **Computer Science (***when we return, I'll be asking for some sample code***)**
   a. **Great intro to learning to code and computational thinking Harvard CS 50 lecture**
      i. If you **only watch** the first lecture- Great series of videos from Harvard's intro course-https://youtu.be/F0W0VEr0-44

         https://youtube.com/playlist?list=PLhQjrBD2T382_R182iC2gNZI9HzWFMC_8 (with David Malan!)

   b. To do a **tutorial**-(choose one)-Join W3 schools, freecodecamp tutorials or codeacademy Python class (free) (see youtube videos from these guys)

2. Learn more about the **AP CSP Exam** from College Board
   a. Main page for AP CSP (click for link)
   b. Read the **Course and Exam description** and try some sample problems. See link at bottom of webpage above.

3. GET **Inspired**

a. Pick your own OR watch the powerful documentary about **women in Computer Science** now free on youtube. It includes interviews with top people in the field : **CODE debugging the gender gap https://youtu.be/jlb6Qrvgt0Y** Or Check out the book/Movie **"Girl Code"**

b. Check out some fun stickers you can buy on RedBubble or elsewhere for Women who Code for your laptop

THE GIRL CODE

c.

Find some cool images and designs at https://dribbble.com/tags/women_code

d. Learn more about how you can participate in our new **CS Honors Society. Think about how you want to run it next year.**
https://www.csteachers.org/page/computer-science-honor-society
Be sure to talk to your friends about the class and joining our new CS Honors Society—Involves service projects related to CS like teaching girls to code e.g., GirlsWhoCode or city kids e.g. code in the schools

e. **Mentoring and Internship Resources for next year through UMD/UMBC**
   i. Check out local resources available to us at UMD (MCWIC is at college park-- https://inclusion.cs.umd.edu/mcwichoused and
   ii. CWIT at UMBC https://cwit.umbc.edu/).

Some Extra resources to explore

a. Intro to **CSP Code.org** video (https://youtu.be/jQmoz894CG0)

There are some great videos from code.org describing the Internet and how it works. Start with https://youtu.be/Dxcc6ycZ73M

b. **Code HS** introduction (see both links in #1 above)
   - https://codehs.com/course/apcsp_py/overview
   - At this link you can find the basic Syllabus and check out some of the programming concepts under the Explore section. You will get a course invite code once we start in August

c. Playlist of **Crash course** Computer Science Vids

https://youtube.com/playlist?list=PLH2l6uzC4UEW0s7-KewFLBC1D0l6XRfye

Watch **preview, early computers, boolean Logic and Binary** (1-4) and then some of **programming languages** #11-13 (algorithms) and finally we will also be focused on **the Internet and CyberSecurity** in this class (#28-32)

You can learn a bit about how computers work which is mostly what the CSP intro course is about. Carry Anne Philbin is amazing and very passionate—You can chose

to watch a bit of any of these "sets" of videos" to get started on the class content. Particularly fascinating is the psychology of computing (#38)