Summer Assignment for AP Computer Science Principles 2022-23

(with Dr. Boser)

1. Learn **about Computer Science/Python**—especially if you've never done any coding or its been a long time—you'll want to do a basic tutorial. We will be using the **codeHS** curriculum this year, but you can learn basic Python in a few different ways. Submit a simple program that will take user- input and return a calculation (your choice). You can send a shared link via Repl.it or trinket.io.Email me (boserk@maryvale.com)

2. Learn about the **AP exam requirements(college board)**. There is a multiple choice and a portfolio project (create task) component. Find out more about what you will be learning.

3. **GET** inspired. Watch some great videos about AND about Women in Technology

   a. **Watch the movie CODE:** debugging the gender gap and find ways to get inspired
   b. **Join CS Honors Society:** Think about how to recruit others and make computer science skills more part of your life/ helping others—read about what you can do as part of a CSHS.

Reflect on what you're learning.

MORE details and links for learning:

1. Learning About **Computer Science/ Python (Send me some of your 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

      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/jQm0z894CG0)

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 (we will adopt this curriculum using python)
   - 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)