Computer Science Learning Resources from Home: **Updated: 3/20/2020**

I have assembled this page of optional learning opportunities that you can access yourself for free, listed in order of complexity. Hopefully these can allow you to explore learning and computer science from home online by computer or some even on your phone – feel free to share them with others who may be interested. None of these are required but practice may help you keep up your skills for when we return. Let me know how it goes and if you have any feedback on them. We may end up adopting one of the later platforms for our classes. And if you have any additional suggestions, feel free to email me. Take Care and hope to see you in class soon.

Keep On Coding!
Mr. Bergquist
Garfield HS Computer Science

CS Unplugged – lessons & activities teaching computer science concepts <u>without a computer</u>. Parents or older students could try some of these activities with siblings or neighbors – could be a fun opportunity for the whole family at: https://csunplugged.org/en/ (additional world languages available from drop down in upper right of page)

Epidemic Simulator in MIT's Scratch Block Programming online environment (https://scratch.mit.edu/) Scratch is and great place to start Coding **and** has an excellent online Epidemic Simulator where you can adjust a slider of the percent of people staying at home to see how infection will progress over time. It demonstrates well how we reduce the number of infected people at any one time by staying at home – the important goal here is to insure we have enough medical facilities to accommodate the sick, so we don't want a high peak. You can also try out coding at the site program stories, art projects, make music and build games with a ton of examples and resources from MIT (https://scratch.mit.edu/) Note: the programming can be used in a variety of world languages using the globe icon in the upper left of the programming screens (use the "See Inside" button to get there).
Here's the link to that Scratch Epidemic Simulator:
  https://scratch.mit.edu/projects/376656449/

Hour of Code (https://hourofcode.com/us) has a ton of short programming tutorials for a variety of skill levels. It also features world language selection in its upper right pull down for wider accessibility. If you want a more complete lessons, you can then go on to Code.org at https://code.org/ .

BrainPOP (https://www.brainpop.com/ **) has a wide range of videos and lessons (Grades 3 – 12) on a variety of Computer Science Topics** — You can sign up for a free family access account now.
And they have a nice animated video on the CORON Virus that may be good place to start (does not require an account):
  https://www.brainpop.com/health/diseasesinjuriesandconditions/coronavirus/

Lynda (https://www.lynda.com/ now LinkedIn Learning) has a huge variety of lessons including computer science and programming. If you have a Seattle Public Library card (& pin) you can get free access to many of these lessons, or you can sign up for a one-month trial. Here is the link to get started by signing in with your Seattle Library card:
  https://www.lynda.com/portal/sip?org=spl.org
And here's a few helpful links:
  Library Index: https://www.lynda.com/subject/all
  Programming Foundations: https://www.linkedin.com/learning/topics/programming-foundations
  Programming Languages: https://www.linkedin.com/learning/topics/programming-languages

And Seattle Public Library has several additional Learning Resources at:
  https://www.spl.org/online-resources/online-learning

MIT App Inventor (https://appinventor.mit.edu/) allows you to use blocks build Android Apps with lots of nice tutorials. This is a good place to try when you grow tired of Scratch; the blocks are more complex and allow you to interact with cloud features like text to speech, Google maps, and sending texts. It is best to have an Android device to try your programs on, and a good place to start is the beginner tutorials: https://appinventor.mit.edu/explore/ai2/beginner-videos

CodeHS has courses on many topics - always free, and its Pro features are now free through June; see the guide for virtual learning . List of classes: https://codehs.com/info/curriculum

AP CS Students' NOTE: They have two classes for AP CS A in Java – it appears that the "AP Computer Science A (Nitro)" class has a bit better Units to focus on, and in the "Supplemental" section has the labs, specifically the "Picture Lab" we usually do (despite it includes Interfaces).

Amazon Future Engineer offers free online computer science classes for any student at **Edhesive** (https://edhesive.com/amazon/free_access) including introductory CS and AP courses (grades 6-12) (and online PD courses) from Amazon Future Engineers — free through August.

Unity - 3D Experience & Game design is offering Free Pro Tools access & Classes through June 20th:
Ever want to try out creating a 3D experience or game, well Unity, one of the top design environments using C# (which is very similar to Java we learn in AP CS A) sent out this announcement:
"Unity is committed to supporting our community of creators during this challenging time by providing all users **complimentary access to Unity Learn Premium for three months** (March 19 to June 20). Get help from live experts, on-demand learning resources, and over 350 hours of great tutorials, projects, and courses. We recommend checking out our most popular courses to get started, including the C# Survival Guide, AI for Beginners, and High Fidelity Game Visuals. You can read about our other top content here. Link: https://blogs.unity3d.com/2020/01/30/reach-your-goals-with-unitys-official-online-learning-platform/

"We're also working to support our community of students and educators by offering Create with Code Live -- free, interactive virtual classes open to students, teachers, and anyone else interested in learning to code. Create with Code makes learning to code fun and engaging through game development and is aligned to ISTE Standards for computer science education. Classes start Monday, March 23 - sign-up here." Link: https://learn.unity.com/course/create-with-code-live

Android Studio – if you have already mastered an Object-based programming language, preferably Java, then you may want to try building Apps in Android Studio (https://developer.android.com/studio).

Additional Learning Resources from SPS:
- Learning Keeps Going (from SPS)
- amazingeducationalreources (from SPS)