

# COMPUTER SCIENCE IN SUMMER 2020

We get a lot of requests for things to do during the summer in pursuit of greater mastery of Computer Science. Our biggest recommendation is that you **ONLY** pursue these at your pleasure. If a parent is forcing you to do any of the following, crumple up this page, burn it or swallow it, then run outside and play. It's summer.

## What Mr. Christensen will reward:

- Find the petroglyphs either in the coulee adjacent to the Lenore Caves or on the wedding rocks near Lake Ozette. Create a picture of you with the petroglyphs. I will reward you with a TSHS sticker for your HydroFlask.

## What you should consider doing:

- Make a program that would be useful for your parents or friends. **Why? Because it's hard to build something.**
- Make a game that would be fun for you. I see a lot of projects that consist of games that no interesting human would play for fun; make a game that you would actually play for fun! **Why? Because it's hard to make a good game, but you got a good start in the PBL project this year—build on that (and work in a team!).**
- Learn a language that is not taught at your school. If you don't know the web trilogy of HTML, CSS, and JavaScript, then you could start with those. The materials at <http://www.codecademy.com> are useful—I used them to pick up HTML and will probably pick up CSS and JavaScript this summer.
- Did you master those? If you are interested in creating a website, ping Mr. Christensen by email. The first several respondents will be assembled into a team and charged with making it happen (in mid-July-ish).
- Learn a language that is not taught at your school. If you think that the visual side of making games might be your thing, learn Unity and C#: <https://unity.com/learn>. Nic B recommends just reading the user manual!
- Read a book about computer science. There are many options, including *Algorithms to Live By* (Christian & Griffith), *Form+Code* (Reas & McWilliams), *Computational Thinking* (Denning & Tedre), *Gödel, Escher, Bach* (Hofstadter—if you feel crazy and have a lot of time). **Why? Because computer science is much more than coding and books like these (and many others) will cultivate your ability to think in science and engineering.**
- If you love math, work on the problems at <https://projecteuler.net>.
- If you like game design, play Zork (DO NOT cheat—make your own map using pencil and paper) or a Zachtronics game ([www.zachtronics.com](http://www.zachtronics.com)) (I recommend TIS-100 or Shenzhen I/O) or explore The Manhole (<https://archive.org/details/TheManholeMacintosh>—don't forget to turn up the sound in the emulator)

## What you might do:

- Is your Python rusty? Do a few exercises at <https://codingbat.com/python>.
- Do you want to practice in a gaming format? Try <https://www.codingame.com/start>.
- If you really want to compete at programming, one TSHS senior recommends <https://codeforces.com>.

**Why are these disfavored? Because you spend the school year on these skills—during the summer, we strongly recommend that you pursue your potential interests and passions.**

## What you should NOT do:

- Learn something that will be taught at your school, in a class that you will take. **That is what the academic year is for. Doing this will only make it boring. If you truly lack confidence in computer science or programming, use the tools above to acquire “adjacent” skills and knowledge. If you do that, we promise the school year will be easier.**
- Go to Coding Camp. You're in high school now; it's time to find your interests and pursue them. **There are exceptions, of course, but the more standardized the “coding” offering, the more we encourage you to consider finding something that interests you and pursuing it. That is a more important muscle to build.**