**IT Guidance for Remote Learning**
Computer Courage

**Introduction**
This document contains general technology recommendations for remote learning for K-12 schools. This document is intended to provide guidance to student families for their home IT setup. It does not provide any school-specific guidance nor does it touch on any specific learning technologies or platforms, it is intended to help you build a secure, reliable, fast home network to support your remote learning.

**Home Networking**
It is important to build a home network that will perform reliability, quickly, and securely in order to support video conferencing, learning applications, and general internet use.

Internet Service Provider
We recommend an internet connection speed of at least 5 megabits per second (Mbps) upload and 5 megabits per second download. The following providers are popular in the East Bay: AT&T, Comcast, Sonic.net, and LMI.net. If you cannot get service from these providers at your home, look into alternative providers such as Viasat (satellite) and Unwired (microwave wireless). Lastly, you can consider using a cellular 4G WiFi hotspot from vendors such as Verizon or AT&T, but these are typically slow and expensive, and inappropriate for video conferencing.

You can check your current speed by going to https://speedtest.net/ and running a test. Please note that this test can be affected by poor WiFi connections (see details below), it is best run on a computer that is wired to the router.

Home Router & Wifi
In addition to a good internet connection, it is important to have reliable, secure, fast home network equipment. Most modern brands are sufficient in 2020, and equipment can be purchased online (e.g. Amazon.com) or at electronics stores like Best Buy. Some internet service providers will provide WiFi routers, though only the most recent ones (such as Xfinity Xfi) have met our general recommendations, we generally recommend purchasing your own WiFi router equipment.

It is important that you connect to the network from a space in your home that has good signal. The best way to do this is to be in the same room as your wireless router. If that isn't possible, try to be as close as you can. You can use the speedtest.net test from various points in your house to find the best location.

You can extend the WiFi signal in your home using wireless mesh solutions such as TP-Link Deco, Google WiFi, Netgear Orbi, and others. These systems come with multiple wireless units that can connect to each other to extend your wireless network.

Home Networking Security
Home networking security is important to your family safety and your experience with remote learning or work. Please review the following US government recommendations on home security:

https://www.dni.gov/files/NCSC/documents/campaign/NSA-guide-Keeping-Home-Network-Secure.pdf.
In addition, consider the following general guidelines:

- When possible, connect via Ethernet cable instead of WiFi (faster and more secure)
- Use your own WiFi, not your neighbor's, for privacy and security
- Enable WiFi password/encryption (WPA2) on hour WiFi
- Consider DNS filtering services such as CloudFlare 1.1.1.1 for Families and OpenDNS or other safe browsing technologies.

**Personal Devices**

Some schools may provide loaner laptops or other devices to perform your learning. School devices are typically managed, secured, and tuned for your needs. In some cases. You may need to work from a personal device you own, such as a Google Chromebook, Apple Mac, Windows PC, tablet. If you do need to use a personal device, we recommend the following:

- Check with your school to see if their policy allows for you to use the personal device
- Use a modern operating system with automatic updates enabled.
- Use modern antivirus software such as Windows Defender, Malwarebytes, BitDefender, Webroot, or others.
  - Be wary of free antivirus software that can cause problems and show ads
  - Macs need antivirus too - we recommend Malwarebytes for Mac or Sophos for Mac
- Use a password manager such as LastPass, OnePass, Dashlane, or other reputable service. The password managers built into modern web browsers are also acceptable.
- Back up your computer with a backup solution such as Windows Backup (PC), Time Machine (Mac), or BackBlaze (works on both).
- Familiarize yourself with common security practices - https://blog.malwarebytes.com/how-tos-2/2020/03/security-tips-for-working-from-home-wfh/

**How to Get Help**

Contact your school administration for additional support if these recommendations are not enough for you to create a stable, efficient, secure network at home for remote learning and teaching.