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## STRENGTHENING THE VOICES OF CASA STATEWIDE

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# Basic Considerations for Computers for CASA

For a computer to be useable for students, it needs to have the following software:

- **A reliable, self-maintaining operating system.** The computers provided by TDCJ don't come installed with an operating system (such as Microsoft Windows). While there are other operating systems available (including free ones), Microsoft Windows is reliable, extremely user friendly, and ubiquitous, so there's no learning curve for the students. In all likelihood, they already know how to use it. Plus, it automatically updates itself.
- **Appropriate drivers installed for the hardware.** Computers, regardless of the manufacturer, are made up of a variety of components produced by a myriad of suppliers. For the computer to run correctly, specific software (called drivers) must be installed to allow the operating system to communicate with the video card, the sound card, the wireless card, mouse, etc. While Windows will often recognize some of these components and install the correct drivers for them automatically, it will rarely recognize all of them (for example, most Dell PCs require you to download the drivers from their website and install them after Windows is installed), so it will be necessary for someone to ensure that this is done before the computers are distributed to students.
- **A standard word processor.** THE standard word processor is Microsoft Word. There are free programs available, such as Google Docs; however, most require an active internet connection to use. Also, if a teacher asked that an assignment be submitted electronically, using a nonstandard word processor would put the student at a disadvantage because the instructor wouldn't be able to open it.
- **A web browser.** The operating system comes with a native web browser installed. It's fairly common for schools to have a Learning Management System (LMS) such as Blackboard LEARN where students can go online to view assignments, submit them for grading, and download learning content. They may also need the internet to do research for assignments or to communicate via email. Schools with an LMS will also provide students with an email address, or they can obtain a free one from a source like Google.
- **An antivirus.** Websites that attract teens are notorious for being rife with spyware and viruses. Windows offers a free one called Windows Defender. It's not very robust, but it is free, and if configured to do so, will update itself and run scheduled scans in the background (but someone will need to download it, install it and configure it to do so). Most other antiviruses, like Norton, require yearly renewal fees.



Consequently, the hardware (the actual computer) needs to have the following components:

- **A DVD-ROM Drive.** A DVD-ROM is sometimes needed to install software like the operating system or office software (most install disks, such as Windows, come on DVDs, so you should request a DVD-ROM in the computers—a CD-ROM won't work). While most programs are now available via download and can be installed from a flash drive, it might be necessary to have one to install the operating system and any other software on the computers before they're distributed to the students. DVD-ROMs were typically installed by default in computers built in the last 10 years, so it's likely that the computers will come with one installed, but since the form asks you to specify, check the box next to DVD-ROM.
- **The basic requirements for running the operating system *as well as* the software.** The TDCJ form notes that all of the systems are compatible with Windows 7. For example, the minimum RAM required to install Windows 7 (32 bit)—the standard home version most people use—is only 1 gb. Keep in mind, that is what's required to run the operating system itself, so any programs opened from within the OS, like a word processor, add to the system's RAM requirements. Some basic recommendations for Windows 7 are:
  - 2 gb of RAM for the average computer user (one who browses the net, uses Microsoft Word, plays solitaire, etc.).
  - 4 gb of RAM for the multimedia computer user (one who watches DVDs, watches streaming video, uses Photoshop, and does some light multitasking).

Windows 10 (32 bit), the current release supported by Microsoft, requires a minimum of 2 gb of RAM to install the OS. The basic operational recommendations for Windows 10 are double those required for Windows 7:

- 4 gb of RAM for the average computer user.
- 8 gb of RAM for the multimedia computer user.
- **An adequate hard drive.** When Windows 7 was released in 2009, it shipped on computers with 250 gb hard drives (newer computers with Windows 10 typically ship with 1 terabyte hard drives). The TDCJ form notes that the smallest hard drives you can request are 40 gb, which is inadequate. While students can use a computer with a small hard drive (meaning it would function normally), they will quickly run out of drive space. Also, in addition to RAM, operating systems allocate space on the hard drive to use for "extra" RAM (this is called *virtual memory*). When disk space runs low and crowds the virtual memory, the computer becomes sluggish and won't run correctly. Obviously, it's a good idea to request as large a drive as is available.
- **A screen.** Any of the options offered will work.
- **A printer.** This is an option on the TDCJ sheet; however, printers require maintenance such as ink cartridges and paper to print on, which are additional expenses. Most schools have printers available to students free of charge.
- **A way to connect to the internet.** All of the TDCJ computers have "network capabilities," but the form doesn't specify if that means a wireless card or simply an Ethernet port (which requires an internet connection with a LAN port and an RJ-45 cable to connect it).



- **A USB port.** Especially if the computers are not equipped with an internet connection, students will need a way to transfer files from their computer to another and vice versa. They will also need a flash drive (thumb drive), if this is case.

One final option on the form is to choose a laptop, which would mean that some of the other options would be unnecessary (such as a monitor and case). There are certain advantages that come with a laptop—students could take it school where they would have internet access (most laptops come with a wireless internet card installed) in the event that it is not available in the home, and they could use it during the day for assignments. The disadvantages, of course, would be having it stolen, losing it, etc.

Explanation of terms on the form:

- **Hard drive.** If a computer was your office, your hard drive would be your filing cabinet. It is the place where all of your programs and documents, as well as your computer's operating system, are held. While the operating system is going to be pretty large (Windows 10 uses 16 gb), most document files are under a megabyte in size (1 mb = 0.001 gb). Computers that shipped with Windows 7 came with 250gb hard drives, which is really all that would be necessary for a student. Larger hard drives (1 terabyte or larger) are common in new computers running Windows 10 to take advantage of multimedia options available online.
- **RAM (random access memory).** While your hard drive is your filing cabinet, RAM is the size of your desk—it determines the number and size of the programs/files you can have open. It also determines the speed at which data can be sent to and retrieved from your hard drive. Not having enough RAM can result in slow loading times and jittery programs, but is usually harmless if you aren't using anything which puts a strain on your system. The amount of RAM required is determined by the operating system requirements plus the software requirements.
- **Case characteristics.** This is just the physical size of a desktop computer. Most desktop computers are either towers or mini-towers, which just means that they stand up straight like a skyscraper. Both are of a manageable size, and the size of the case doesn't really affect the power of the computer.
- **Monitor size.** This is the size of the computer's screen, measured diagonally in inches. Larger screens are preferable, as they just make things easier to see, but any of the listed sizes would work just fine.
- **Hub/switch.** (This is an option for schools or NPOs that are using the computers to set up a computer classroom or office.) A USB hub is a device that allows you to simultaneously connect more USB peripherals (keyboards, mouses, printers, scanners, flash drives) to a computer than you would be able to otherwise. Most computers have around four or five USB slots, which is more than adequate for students' needs.
- **Optical drive.** An optical drive is another term for a CD-ROM, CD-RW (to burn writable CDs) or DVD-ROM drive. As noted above, these are primarily used to install software on the computer. Otherwise, optical drives are mostly used for entertainment (i.e. being able to watch DVD movies on your computer or listen to CDs). They're quickly becoming obsolete, as most entertainment is delivered via the internet, so it's unlikely students will have much need for one, but they're still necessary to install the software.