

Buying a New PC, Laptop, or Other Peripherals

Last updated: 11/2/04

When purchasing equipment, it helps to know what the different feature do. The following is a brief glossary to help you:

Processor: This hardware component does all the processing for the PC. The main manufacturer is Intel and they carry 3 lines depending on how much processing you want to do. The higher the processor, the faster and more reliable your PC will be.

Bus Speed: This is how fast data is sent from component to component in the computer. The faster the bus speed, the faster your computer can work. However, not everyone benefits from the additional cost of faster bus speed.

RAM: This is temporary memory in the computer. The processor uses it to hold data while it does other processes. RAM is like a small hard drive, except it is faster and erases all data when the PC is shut down. More RAM will help make the PC run faster, especially when switching between programs.

BUYING ANYTHING TECHNICAL

There are several general rules for buying anything computer related.

- Name Brands: Many times name brands are best because you know the company will be around to support your product and they have lasted because they have good products. Buying from a generic company is really only good when it is an inexpensive product that you can afford to dispose of if you have a problem.
- Support: Support is critical in the computer field. You hope that you never have a problem, but when you do, you want to be able to talk to someone to get your answer quickly. Not all brand name companies have good support. Do your research, check out their support website before buying, and read the fine print on warranties. Depending on how tech savvy you are, you can often go for less warranty and save yourself money.
- Buy Only What You Need: Just because it sounds good, don't pay extra for features you do not currently have a need for. You can always upgrade later.
- Upgradeability: Make sure that you can upgrade the PC in the future. Upgrading parts can keep your computer going longer and save you money. Be aware not to get stuck with proprietary parts or small form factors not designed for expansion.

BUYING A PC:

A PC pretty much describes any “normal use” computer that is stationary. Compared to laptops, PC’s are usually much cheaper for many more features. You are not paying extra for smaller parts. The following are what to look for when buying a PC and what is recommended:

Chassis: PC’s usually come in 3 form factors. These are:

- **Tower:** Stands upright on your desk. Best for easy maintenance and expandability.
- **Desktop:** Lies down usually under the monitor. Can take up less desk space, but is harder to service.
- **Micro:** Usually a small box with minimal features packed inside. May not be able to get extra features, can not upgrade, and not meant to be serviced by the home owner. However, they take up very little space.

Recommendation: Tower

Processor: I recommend using Intel. They carry 2 lines for PC’s

- **Pentium:** This is the better line. If you plan on doing anything with image, sound, or video editing; or gaming, you want to choose Pentium.
- **Celeron:** This is the lower line. It can work just as fast, and is suited mainly for less intense uses like word processing or Internet surfing.

Processors also have different speeds (measured in MHz or GHz). The speeds available change very often. The available speeds keep going up while the prices come down. Anymore, you will not necessary notice a difference in performance from the low end speed to the high end.

Most system will also include bus speed with processor specs. If you want a better, faster system, choose higher bus speed. You may only notice a difference if you are doing more intense processes.

Recommendation: Intel Pentium 4 [2.8Ghz, 533Hz bus minimum]

Memory: Memory too can change a couple times a year. Typically you just want to look at the capacity in Mb’s. Sometime you will have the option to upgrade to higher performance RAM. I would not recommend this because it may be more expensive to upgrade in the future. RAM is one of the easiest components of your PC to upgrade, buy what you can afford now and plan on upgrading later.

Recommendation: 256Mb [up to 512Mb only if you can afford it]

Hard Drive: Hard drives are pretty standard. The main thing to look for is capacity, which keeps going up every few months. Unless you plan on downloading a lot of pictures or music, or editing video, the smallest drive available is best. Some hard drives have faster read/write speeds (which you will pay extra for). This is only beneficial if you are doing intense processes.

Recommendation: 40Gb (or lowest model)

Floppy Drive: Anymore, floppy drives (3.5”) are becoming obsolete. Many times you can save money not getting a floppy drive. You may want to consider instead getting a USB flash drive which works like a floppy, but holds more and is portable.

Recommendation: Flash Drive (can be bought at local store) and floppy drive only if you still use floppies.

CD Drive: There are 3 main CD drives today,

- **Standard:** Reads only. Cheapest. Best if you do not burn data or watch movies.
- **CD-RW:** Read, writes, and re-writes. Great for backing up files or moving files from one PC to another. Requires writable CD's.
- **DVD:** Just like what you would find hooked to your TV. You can use to watch DVD's on your PC. With a special video card, you can even hookup to your TV and eliminate the need for a player on your TV.
- You can also find a combination of these drives, like CD-RW and DVD. You may also be able to get two drives in your PC, one of each type.

Recommendation: CD-RW with Roxio Software (may have to buy separately). If possible, get a second standard CD drive so you can copy CD's.

Keyboard: Keyboards usually come standard with systems whether you need them or not. Your only real choices is to get a standard, enhanced (has extra hot buttons for opening programs), ergonomic (which is split and slanted to make it easier on the wrists), or wireless (which means you do not have to deal with wires).

Recommendation: Standard keyboard. *I would NOT recommend wireless.*

Mouse: There are 3 different types of mice: standard (use a trackball underneath), USB Optical (which use a laser light instead of a ball), and wireless (usually come with the wireless keyboard). Optical rarely have problems with dirt and can be used on most any surface without a mouse pad. Wireless do help if your mouse cord is too short.

Recommendation: USB Optical w/ scroll wheel.

Sound: If you do not listen to music a lot on your PC, then the cheapest sound card and speakers are best. Usually, this option is integrated so it can not be upgraded in the future. On the flip side, if you love to listen to music and want to turn your PC into a “jukebox”, then you will want to invest in a SoundBlaster product with descent stereo speakers. You can also forgo the speakers if you have a stereo near by on speakers built into the monitor.

Recommendation: SoundBlaster sound card, speakers as desired.

Recommendation: Copy all your CD's to the PC and let Windows Media Player play hours of uninterrupted music for you.

Video Card: There are two types of video cards, Internal and Integrated. Integrated means that it is soldered to the motherboard and can not be upgraded. It also uses more of the main processor. Internal mean that it is plugged into a video slot and can be upgraded at any time. It also will help your PC run faster when doing intensive processes because they have their own processor and RAM.

You can also get video cards that allow you to capture video or send video out to your TV.

Recommendation: Depends on usage, but for average use any card will work.
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Monitor: There are two different kinds of monitors:

- **CRT:** These are the standard monitors that most people know. They can take up lots of desk space, but are much cheaper. Some monitors have “flat displays” which is flat glass; not to be confused with “flat panel”. The actual display of a CRT is 1” less than what is stated.
- **LCD Flat Panel:** These monitors are very slim and save space. However, they are more expensive and should only be used when space is an issue. Actual display of LCD is what is stated. LCD’s also consume less power and in some cases pay for themselves in 2-3 years.
- Monitors come in sizes from 15” to 22”. Choose the size and price that is best for you. Typically, most resellers price either 17” CRT’s or 15” LCD’s.
- Monitors will often times have different “refresh rates” and “DPI”. Most people can not tell the difference by numbers, but can tell by looking at a showroom display. Because you can not always see the model before hand, buying name brand is recommended.
- You can get monitors with built-in speakers to save desktop space.

Recommendation: 17” CRT Monitor
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Recommendation: Many times you can choose not to buy a monitor with your computer and instead buy the “perfect” one from another source that has more selection. You can also use an existing monitor until it goes out.

Modem: If you still have dial-up service or you want to use your PC to fax documents, you will still what to get a modem. For many PC’s, they still come standard. Getting the cheapest is best.

Recommendation: No modem unless needed.
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Network: Most machines will come standard with a network card/port. Because of new technologies, you want to make sure you have one. As far as type, the cheapest one is fine.

You can also get wireless systems. They are great for connecting other PC’s, but you should buy separately so that you get a system customized to your needs.

Recommendation: Any 10/100 network card (even integrated).

Operating System: About every PC in the world runs Windows. If you are buying a new PC for home, you will want to get Windows XP Home Edition. Home Edition will also work for small networks. You would only want to pay more for the Professional Edition if you belong to a larger network. Windows will also ship with “Plus” (extra) that included fun little add-ons like wallpaper and games.

Recommendation: Windows XP Home Edition (w/o Plus)

Productivity Software: This usually refers to WordPerfect or Office. Since any TCS staff member can get one copy of Office to install at home (while they work at TCS), then I would recommend getting the cheapest package offered and get the free copy of Office from work.

Note: you should always uninstall the software that came with the PC before installing Office.

Recommendation: Cheapest bundle (*you likely will not use it*).

Other Software: There is always other software that will come with the PC. Most of this stuff is companies giving you free trials or the seller making it easier by installing it for you. Since you will always pay more for it from the seller than buying at the store, I would recommend not paying anything for additional software. If it comes free, I usually uninstall it as soon as I get my PC so that it will not interfere with other software I may have. There are a couple of items to pay attention to:

- Virus Scan: Most sellers will give you a 90 trial version. I personally recommend going with the trial version of Norton’s, and shop the stores in the 90 days to find a good deal. Virus programs now require you to subscribe every year, so keeping an eye out for deals is always the cheapest way to go. If money is no object, buy the full version online after your trial period is up.
- Music program: There are several “jukebox” programs out there. However the recommend choice if Media Player that come free with Windows. You only need to buy music programs if you want to edit music.
- Photography/Video: There are much better programs that you can get in the store. Don’t bother with buying it with your PC.
- Internet Access: I would recommend contacting an ISP directly.

Other Equipment: Often times, sellers will want you to buy other items, like printers and cameras. I recommend not doing this at the same time. Get your PC then shop for the printer, camera, etc. that fits your needs. You will usually save lots of money buying from a different source.

Also, watch closely for default add-ons. Some places are notorious for adding/hiding extra equipment, like surge strips, to the quote. Again these are usually cheaper elsewhere, so make sure to read every line.

Shipping: Many times you can get shipping for free. If not, be prepared to pay up to \$100 for standard shipping. Packages are bulky and heavy so they can cost quite a bit. Even when standard/free shipping says that it may be a few weeks, often times you get your PC in 4-5 days. Usually, you can watch the shipping status and prepare for its arrival. Just make sure to ship it to an address where someone will be there to sign (like work) or you may have to drive to a UPS center.

Warranty: Warranty is about the toughest choice of buying a PC. It mainly depends on how comfortable you feel fixing your PC, how much down time you can afford, and what kinds of risks you are willing to take. You will usually get warranties for 1 to 4 years. If you buy from a reputable company and are comfortable with computers, a 1-year option is best because you could save on parts & labor in the long run. However, if you don't want to think about computer hardware and you plan on keeping your PC for 4 years, then the 4-year option is best.

You also have the choice of in-home service, which means you never have to take your PC into a shop or send it back in the mail; next day support, which means that your PC should be fixed by the end of the next business day; or "gold" support, which means you get extra special attention. These options are driven by how you feel that you can deal with issues when they occur.

Other Services: Many places will also sell you services of setting the PC up in your home, moving data and programs from your old PC, or instruction on your new computer. While setup is pretty easy, if you feel the need for moving data from your old PC, it may be worth it to you to have someone else do it. Personally, if you have a friend that knows PC's, or child, they can do it for you much cheaper.

Tax Exempt: As an "educator" with an Ohio public school, the state will allow you to purchase a PC for the primary use of "education" tax-exempt. You will need to use the form at the end of this document (or download one from the state's website) to submit to your computer vendor. Each vendor has different procedures for filling tax-exempt status, so you will want to check their website or call before ordering your PC. Depending on the cost of the PC, you can expect to pay \$35-\$90 in tax. While many internet companies are not required to charge tax, most computer manufactures are.

BUYING A LAPTOP:

For the most part, laptop specs will run along the same lines as a PC. You will notice that you do not get as much for your money, but you are getting portability. Also, there is not much you can upgrade on a laptop except for RAM. Here are a few extra things to consider when looking at laptops:

Processor: Intel Centrino and Pentium M are new technologies for processors. They are geared strictly for laptops. The idea is that they save power while not compromising performance. They are more expensive and should probably only be considered if you plan on long usage with a battery.

Screen: Laptops typically come with LCD screens between 14-15.5". You can get up to 17", but the laptop is larger and consumes more power.

Drives: While you will usually get an internal hard drive and CD drive standard, if you want a floppy drive, you may have to settle for an external one you plug in. Many "extras" for laptops are external which means extra pieces you have to deal with.

Battery: Whenever you are near an outlet, you should use AC power. However, since laptops are designed to be portable, the focus on power is from a battery. Many batteries will last 3+ hours without being charged. The time frame depends on the size of the battery, the type of equipment you are running, and what you are doing. If you plan to be on your laptop from long times away from power, getting a second battery may be a good idea.

Mouse: Laptops will typically have touch pads for the mouse, which means you drag your finger around a small pad to work the cursor. Many people will buy a separate mouse to plug in to the laptop.

Docking Station/Replicator: A docking station is a device that allows you to set your laptop into it and immediately get connections to an external monitor, keyboard, mouse, and network. When in a docking station, your laptop can feel and work just like a PC. Along with the docking station, you will need to purchase the external equipment separately.

Case: You will want to buy a nice, padded case to hold your laptop and cables. A good case can prevent expensive damage from being done from dropping it or exposing the laptop to weather.

Laptops are really only a good idea if you really want to take your computer with you. To use it "just in a dorm room", you are throwing money away. The other thing to consider with laptops is the weight. There can be a big difference in weight (and usually price) and if you are carrying it everywhere with you, your arms and back may have an opinion on the matter. Most laptops weigh just about as much as a gallon of milk, so haul a carton around all day and see what you think (and enjoy cheese for dinner). On the flip side, laptops are great for doing work or watching movies on the plane or in the car.

Example of a system that I would recommend for the average user:

PC:

Processor:	Intel Pentium 4, 3.0GHz, 800Mhz Bus
RAM:	256Mb
Hard Drive:	40Gb
Floppy:	Yes
CD-ROM:	CD-RW w/ Roxio EZ CD Creator, 2 nd standard drive.
Video:	Standards for the PC.
Monitor:	17" CRT
Sound Card:	Sound Blaster
Speakers:	Standard
Keyboard:	Standard
Mouse:	USB Optical
Modem:	No (unless needed)
Network Card:	Yes
OS:	Windows XP Home
Software:	Minimum that you can get.
Warrantee:	Cheapest (usually 1-year)
Shipping:	Cheapest

Laptop:

Processor:	Intel Pentium M, 1.60-2.00 GHz
Display:	15"
RAM:	256Mb
Hard Drive:	20Gb (or smallest available)
CD-ROM:	CD-RW (unless you want to watch moves, then DVD)
Floppy:	None (buy separate USB Flash Drive)
Mouse:	USB Optical (extra)
Modem/Network:	(usually comes standard)
Case:	Yes
OS:	Windows XP Home
Software:	Minimum that you can get.
Warrantee:	Cheapest (usually 1-year)
Shipping:	Cheapest

*** Recommendations will change based on what is available and what software at the time requires. Recommendations listed here are only current for November 2004. After that time, you may want to consider better options. Users using their PC's for more intense applications should buy systems that are "beefier" than the base recommendations.

*** The opinions included in the document and any corresponding classes are the sole opinions of Scott Hamman and not necessarily the opinions of Troy City Schools.



STEC-U
Rev. 3/15/04

Sales and Use Tax Unit Exemption Certificate

The purchaser hereby claims exception or exemption on the purchase of tangible personal property and selected services made under this certificate from:

(vendor's name)

and certifies that the claim is based upon the purchaser's proposed use of the items or services, the activity of the purchase, or both, as shown hereon:

Purchaser must state a valid reason for claiming exception or exemption.

Purchaser's name

Street address

City, state, ZIP code

Date signed

Vendor's license number, if any

Vendors of motor vehicles, titled watercraft and titled outboard motors may use this certificate to purchase these items under the "resale" exception. Otherwise, purchaser must comply with either rule 5703-9-10 or 5703-9-25 of the Administrative Code.

This certificate cannot be used by construction contractors to purchase material for incorporation into real property under an exempt construction contract. Construction contractors must comply with rule 5703-9-14 of the Administrative Code.