

## *How to Build a Computer by Taylor Bowling*

Have you ever wanted to build a computer for your own personal use? If someone gave you a box of parts to build one, could you do it? Sadly, most people would have answered no to this question. Most people are terrified of computers and are afraid to do anything with them besides playing solitaire. These same people would see a box of computer parts and ask “what in the world do I do with all that?” We have all played with LEGOS and built with them. A computer is no different. Much like a LEGO, a computer is just snapping things in place, with an occasional use of a screw driver. Hopefully this how-to will explain to you how to build your own computer.

Before we get into all the fancy stuff inside, we are going to need a shell to put it all in. Start off with buying a computer tower. The computer tower is that thing we all associate computers with, the tall little box that everything plugs into. We are going to assume you are building a home computer for watching movies and storing pictures. For this purpose you can buy a relatively small case if you want, however if you were building a gaming computer you would need a much larger case to put all of your major gaming components in.

After you have chosen a tower it's time for the exciting part, buying a motherboard. A motherboard is the main “circuit board” for everything in your computer. Everything that your computer does must pass through this device. Motherboards can range from fifty dollars to anywhere over two-hundred dollars. Just like with anything else, you get what you pay for. If you chose a smaller tower, you may want to get a smaller motherboard. This small motherboard is called a micro-ATX motherboard. These are no different than regular ATX motherboards, they are just for smaller towers. If you have a larger tower you should go with an ATX motherboard. Whenever you buy your tower it should tell you which motherboard it supports, micro-ATX or ATX.

Decide what kind of processor you would like to have before you buy your motherboard. Think of a processor as the computer's brain. This is where all of the computer's “thinking” is going on. Whenever you click something or open a game, the computer processes that command in the processor. Each motherboard is suited for a different processor and it will always tell you which it is suited for. The motherboard will either use INTEL or AMD. Essentially there is no difference other than AMD is usually cheaper ([howstuffworks.com](http://howstuffworks.com)). This may or may not even matter to you; however you must know what processor the motherboard will accept so that you can buy that corresponding processing chip.

There is one more decision to make before you purchase a motherboard. Do you want a graphics card? A graphics card or graphic processing unit (GPU) is essentially another processor for your computer but its main purpose is to process graphics only. With a graphics card you can watch your movies clearer and view your pictures in better quality. However some motherboards come with on-board graphics cards. These on-board cards are certainly not as productive as a GPU but will get the job done. If you like watching

movies and playing games it is highly recommended that you spend the cash to get a graphics card.

Graphics cards can get to be pretty pricey. Ranging from forty dollars to six-hundred dollars; you can certainly spend a whole pay check on one. There are three types of graphics cards, PCI, PCI-Express, and AGP. These three are just different ways data transfers from your GPU to your processor and monitor. Check your motherboard to see what kind it will support. Most new motherboards only support PCI-Express while older ones will generally support AGP. Once you have chosen your GPU you are one step closer to having all of your supplies.

So we have our tower, motherboard, and graphics card. Now we need a power supply to power all of these things. Think of the power supply as a giant battery that powers your computer. When buying a power supply you will notice that there are many types. Most types are different from each other due to their power. You can get a power supply with two-hundred watts all the way up to one-thousand watts. If you have purchased a graphics card it is suggested that you buy a power supply with at least 400 watts ([www.buildyourowncomputer.net](http://www.buildyourowncomputer.net)).

You are almost done buying parts for your computer. We next need to purchase a hard drive and a disc drive. The disc drive is pretty self explanatory. This drive is where you insert your CD-Rom's and DVD-Rom's. You can also buy a disc drive that burns CD's and DVD's for you. Now you must purchase a hard drive. A hard drive is where all of your data on your computer is stored for later use. All hard drives have different amounts of space on them. These are classified in gigabytes (GB) and less commonly terabytes (TB). One gigabyte can hold up to one-thousand pictures. Most hard drives come with at least two-hundred and fifty gigabytes. On the other hand, one terabyte is equivalent to one-thousand gigabytes, so it's quite larger. For simplistic purposes a two-hundred to five-hundred gigabyte hard drive will do fine.

Congratulations, you now have all of your parts! You're done with the hardest part of this entire process. Now we are going to build a computer with everything purchased. Get your tower and a Phillips screw driver ready.

Open your empty computer tower on both sides using latches that the case should have. You should see four holes on the back side of the case evenly spaced between each other. This is where your motherboard will be mounted. If you examine your mother board you should see that it also has four holes on or around each corner of it. Using the mounts, (tall brass screws) place your motherboard over the corresponding holes in the case. Make sure the motherboard doesn't touch to the case once mounted; it can cause a short out in the board ([www.techpowerup.com](http://www.techpowerup.com)). Once it is placed firmly into the tower you can move on to the next step.

On your mother board you should see a white square. This large white square is in fact where you plug in your processor. Carefully unlatch the cover over your processor plug-in. There should be a symbol both on the processor and the square to show you where to

align the corners of the processor. Place the processor in carefully and then re-latch the cover protecting the processor. Make sure you have a heat sync to mount over your processor. If not, your processor will burn up pretty quickly and your computer will shut down.

Next you need to put in the power supply (PSU). The power supply should mount directly in the top back of the case. Make sure you mount it with the plug in facing out. The power supply has a lot of wiring attached to it; don't let this intimidate you. The truth is most of these wires you won't even end up using. Once the power supply is mounted firmly place all of the wires protruding from the PSU to the side for later use.

It is now time to put in the disc drive and the hard drive. Both are structurally similar so they are both installed in the same way. The front of the computer tower should have a rack like structure on it. This rack is for mounting your drives. For your disc drive you will need to push out one of the plastic square covers if one isn't already. Slide the disc drive into the rack right behind where the square cover was removed. Once you have it in, carefully screw it in where the screw holes allow. The installation of the hard drive is the exact same. However since the hard drive does not need to be visible you can void pushing out another square cover. Just mount the hard drive on the rack and screw it in.

If you have purchased a graphics card you can now attach that to your motherboard. The metal backboard of your graphics card should be facing out so that it can be plugged into your monitor later. With this in mind; carefully snap the card into the PCI or AGP slot in your motherboard. These can be distinguished by their white or blue color.

Go back to the wires attached to the PSU. Locate the large 20 or 24 pin connector and locate the corresponding plug in on the motherboard. After plugging this in your motherboard should have power once turned on. Locate your hard drive and disc drive. The power supply should have plugs labeled "SATA" on them. One SATA cable should plug in to the back of the hard drive and another to the disc drive.

If you have purchased a graphics card and it in fact has a PCI plug in, locate the PCI cord and insert it into the graphics card. This is very uncommon on cards that aren't PCI-express and you shouldn't really worry about this.

After you have done all this you may reassemble your computer tower. Connect your power cord to your power supply and turn the computer on. After this you are done, you have built your very own computer. Install your operating system of choice and all of your other essential programs.

Motherboard



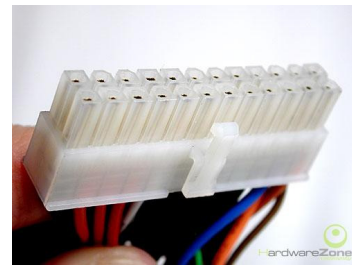
SATA Cable



Processor



24 Pin Connector



Graphics Card



Computer Case



Power Supply



Hard Drive



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