

- [GPU/Graphics Card/GPU](#) – does processing relating to video output. Some motherboards have an "onboard" GPU built in so you don't need (but may add) a separate video card. Otherwise, you will need a video card. These plug into a slot on the motherboard and provide a place to connect a monitor to your computer.
- [Sound card](#) - Comes with motherboard but may want to be upgraded

On top of the internal components listed above, you will also need these external components:

- [Keyboard](#) – for typing on. Many motherboards won't even boot without a keyboard attached.
- [Mouse](#) – for pointing and clicking. Unless you chose a text-based operating system, you will likely want one of these.
- [Monitor](#) – This is where the pretty pictures go. They come in many forms, the most common being [CRT](#) and [LCD](#).

Motherboard



Find the motherboard standoffs (spacers) that should have come with the case. They are screws, usually brass, with large hexagonal heads that are tapped so you can fasten screws into the top.

seated. Although this does require a fair bit of force, do not overdo it or you may break the RAM module.



Different types of RAM modules

Take a good look at your seated RAM, if one side seems to be higher than the other, odds are it is improperly seated - take it out and try again. As you handle the RAM, try not to touch the copper stripes you can see along the bottom edge, as doing so is the best way to damage the part.

Start adding RAM at the slot labeled "Bank 0" or "DIMM 1". If you do not have a stick in "Bank 0" or "DIMM 1" the system will think there is no RAM and will not boot.

On newer motherboards with 4 slots, you'll see alternating colours. For example, slot 1 is blue, slot 2 is black, slot 3 is blue, slot 4 is black.

If you were to put 1 gigabyte of RAM in your personal computer, it is best to use dual channel 512MBx2 sticks. Put the first 512MB stick in **slot 1**, and put the 2nd

stick in **slot 3** (the two slots that are blue) - leaving slot 2 empty. This will give you better performance, vs. putting 1GB in slot 1, or two 512MB sticks in slot 1 and 2.

Power supply

Installing your power supply is pretty straightforward, if it came with your case it was pre-installed and if you took it out earlier to get the motherboard in, now is the time to put it back. Otherwise a few moments of screwdriver work will get the job done. Generally there will be a bracket on the top of the case where the power supply is mounted and a few screws used to fix it in place. Some cases place the power supply differently, see the documentation that came with yours.



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Some power supplies come with modular cables, so you can plug in only those you'll be using, now is a good time to figure out what you'll need and plug them in. Other power supplies have all the cables hardwired in, you'll want to separate out the ones you'll need and neatly coil the remainder somewhere out of the way.

If your power supply has a switch to select 115v or 220v make sure it is set properly, this is important. Many newer power supplies can automatically select and don't have such a switch.

Once you get the power supply installed make sure you check the motherboard documentation carefully for the location of the power sockets. You may then connect the main power, a 20 or 24 pin plug, into the motherboard. There may also be an additional four or eight pin power lead that needs to be plugged in to the motherboard (the CPU power connector) usually located near the processor socket.