

Technical Tips

Buying a New Computer

by Diane McCargar

Buying a computer is a daunting task for most people. It can be especially stressful when funds are limited. Before buying a computer, you need to be clear about what you want this machine to do for you and/or your learners. Do you want to use it to create movies? Do you only want to be able to type things? Will you be accessing the Internet? Do you want to use the computer for educational games? Do you want to be able to burn CDs. This information will help you and/or a salesclerk determine what bells and whistles your computer should have.

Most personal computers can be placed in one of three groups: budget, mainstream, or high-end. Budget computers might only be used for word processing and e-mail. A mainstream computer should allow you to use office applications, general multimedia functions such as burning CDs, most games, and view complex webpages. High-end computers would be for people wanting to use complex games including ones that use the Internet, high-end multimedia editing and Web development.

After you are clear which system you're looking for, the next step is deciding whether to go with a brand name computer or a custom-made one. Brand name computers are usually more expensive but have definite advantages. With a brand name computer you can normally avoid problems related to parts not being compatible. You can also usually count on the company being around long enough to honour your warrantee and service needs. Larger companies that produce brand name computers are also more likely to have corporate or educational pricing. Dell, Compaq, Gateway and IBM are some of the more well known brand names.

When it comes down to actually choosing between computers, you need to start comparing components. The obvious place to start is the brain of the computer, the processor. There are two main brands of microprocessors: Intel and AMD. Each company has made a range of processors over time. Here's a list of some of Intel's processors: Pentium with MMX, Pentium Pro, Celeron, Pentium II, Pentium III and Pentium IV. AMD's processors include K5, K6-II, K6-III, Duron, Athlon (K7) and Athlon XP. Intel's Celeron processors and AMD's Duron processors are generally known for being geared to the budget-minded consumer.

Comparing the processors in terms of speed is not an easy task. The more skeptical among us might say that the computer industry has done this on purpose to keep consumers in the dark. In simple terms, you need to consider two things: the architecture of the processor and the clock speed. The architecture determines how much information the processor can process in one "cycle". The clock speed is the number of cycles it can complete per second. The names of the processors tell you what kind of architecture they contain. If you look at the lists of Intel and AMD processors above, each list is generally ordered from slowest to fastest. For example, a Pentium III processor is faster than a Pentium II processor. You can view a more detailed list that includes a comparison between Intel and AMD processors at <http://www.karbosguide.com/hardware/module3a1.htm#what>. Clock speed is measured in megahertz (MHz) or gigahertz (GHz). One gigahertz is equal to 1000 megahertz. If the processors have the same architecture, then an increase in clock speed means a faster computer. For example, a Pentium IV 2.8 GHz is faster than a Pentium IV 2.53 GHz. When the processors are different a faster clock speed doesn't always mean a faster computer. A Celeron 1.8 GHz is not necessarily faster than a Pentium IV 1.6 GHz. For a comparison of processors including clock speeds you can view Webopedia.com's Microprocessor Comparison Chart at http://www.webopedia.com/quick_ref/processor.asp.

For those of you who want someone else to make the choices for you here's what PCWorld.com suggests for our three different types of computer buyers.

Budget	Mainstream	High-End
Celeron- 1.7GHz	Pentium 4 – 2.53 GHz	Pentium 4 – 2.8 GHz
Athlon XP 1900+	Athlon XP – 2400+	Athlon XP 2700+

The amount of memory, RAM, inside your computer can also play a significant role in how fast a computer performs. Look for Part II of this article in the next issue of CONNECT where we will discuss memory for your computer.