Bit of a Byte

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There is nothing new under the sun. The wise man Solomon said "there is never an end of making many books, and much reading wearies the flesh" (paraphrase). I have certainly found that both of these statements are true, especially when it comes to computers. We might think that we have created something new; but if we stop and think about it, we will see that it has already been done.

I have found that today there are many more gadgets than ever before and that the generation of today especially students are able to do many amazing things with these gadgets; however they give no thought to what went into making these tools. They care only to use them but don't want to waste time learning how they are made. Working with students, I have often wondered **where are the critical thinkers of today**? We turn on the computer and go on the internet, but do we know what is involved in going on the internet? What does your computer have to do to accomplish this seemingly simple task? Have you ever wondered how the information travels on wires and through the air from one computer to another computer? Suffice it to say that it is not as simple as it seems, there are many books written on this, and it takes more than this article to explain the whole process. I would like us to consider, however, the kilobytes, megabytes and gigabytes that we often hear about, what do these all mean?

I remember when I learned that a computer basically is a bunch of memory, and memory is locations that store information. The computer does things based upon what is stored in a certain memory location. The smallest unit of memory storage in a computer is called a bit, and 8 bits make up one byte. Armed with this bit (pardon the pun) of information it is easier to understand that a kilobyte is just a fancy word for 1000 bytes (it is not exactly 1000 but to make things simple we commonly think of it as a thousand). This means that when I talk about a kilobyte I am talking about 1000 places (addresses) to store information, and in each location 8 pieces (bits) of information can be stored. Imagine if you were a postal worker who must deliver letters. In order to deliver letters successfully, you must have an address to go to and a mailbox to put the letters in. This is what the computer does. The more memory spaces you have, the more you can do. The irony is that the more we seem to have the more we use. Today we have megabytes (million) and gigabytes (billion), but what can we do with a kilobyte of memory?

Who remembers those Vic-20 days? Imagine a computer with only 5 kilobytes of memory, 2.5 of which was used by the computer itself and the other 2.5 was what was available to run programs. And yet the games were so interesting! When the Commodore 64 was introduced, everyone thought this was it. A computer with 64 kilobytes of memory (half of which was used by the computer itself and the other half was available to the user). Who could ever think of such a thing? Remember how amazing the graphics were? Or were they? Compared to the graphics of today we might laugh! Today we might think that we have reached the ultimate, but just like the Vic-20 generation, one day the graphics of today will be thought of as ancient. Today with computers things change so quickly, before you can blink something new is out, but is it really new? Read the quote at the beginning of this article and think about it. It seems to me that the more things change the more they seem to stay the same. What do you think?