A quick and simple explanation from us, IT Accessed.

IT Acronyms Explained: Bits 'n Bytes

KB, MB, GB and now TB are the most commonly used units of measure for the size of data.

KB = Kilobyte   roughly 1,000 (1 thousand) bytes
MB = Megabyte   roughly 1,000,000 (1 million) bytes
GB = Gigabyte   roughly 1,000,000,000 (1 billion) bytes
TB = Terabyte   roughly 1,000,000,000,000 (1 trillion) bytes
And PB = Petabyte   roughly 1,000,000,000,000,000 (1,000 trillion) bytes

So what is a byte? A byte is 8 bits!

So what is a bit? A bit is a 1 or a 0. A computer can understand a "bit" because it can be represented by some thing either being in a state or not in such a state, a binary code. For example, something has either a positive or a negative charge, is on or off, open or closed. Think of a card with a series of small holes in a row, sometimes there is one or more gaps between the holes – using this code you can build up an instruction, basically a computer does this using electricity and magnetism (north or south?).

So what? Well it takes around 1 byte for a computer to represent a letter. So, for example, to store the letter "A" in your computers storage would take up about 8 bits. To let the computer know that it was blue and was typed in Times New Roman Font in bold would take more bytes to describe these features and therefore take up more space on your computer.

Your photographs have every single pixel described – imagine the pixels as the dots you can see in poor newspaper pictures. Each pixel takes so many bytes to describe it. The closer the dots the better quality the picture, therefore the bigger the photo in terms of its data size. This is why pictures in general take up more room on your computer and take a long time to transmit to and from the Internet – especially if you don't have a broadband connection.

What about the "roughly" you mentioned? It's to do with computers using binary rather than units of ten. Strictly speaking a Kilobyte is 2^{10} which equals 1,024 and not 10^3 which equals 1,000, but because they are fairly similar and people are used to units of 1,000 they tend to get used.

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