

The ten key things every literate citizen should know about computers and information technology

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"What Every Literate Citizen Should Know About Information Technology"**

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1. The concept of stored data stored program computer:

Computer executes a program written by humans that uses data supplied by the user and produces results. Both the program and the data is stored in the memory.

2. Representation of data in the computer:

The data can be encoded, displayed, and 'inputted' in a number of different ways, representing a vast multitude of the types of information.

3. The data can be organized into entities:

Files, data bases, html pages linked through the WWW - all allowing easier and more controlled access to the desired information

4. The concept of language:

A formal, carefully defined language is used to communicate with a computer - at the low level something like machine code or instructions keyed into a calculator, at the high level menu driven selections, query languages, with 'higher level programming languages' in between.

5. The concepts behind managing and defining complex systems:

Information hiding and information giving, abstraction and encapsulation, layered systems.

6. The concept of scale and order of growth:

How fast is fast, how slow is slow, what is intractable, what cannot be computed, why do we care.

7. Varied examples of uses of computers in the world around us:

Commerce, information depository, medical applications, weather modeling (and other types of modeling), image processing, simulations and forecasting, control systems, virtual reality based training systems, exploration and experimentation for sciences and math, etc.

8. Ability to use basic applications and access computer based information - in the context of meaningful tasks:

Word processors, spreadsheets, e-mail and other means of communication, presentation software, web searching and authoring, image and sound processing applications.

9. Understanding of the impact of computing on today's society:

Privacy, security, safety, intellectual property ownership and rights, medical risks, the issue of inequity.

10. Ability to critically assess computer-generated results:

The nature of web documents, the potential inaccuracy of computation, the risks of programmer errors, faulty design.