



INTRODUCTION TO COMPUTER STUDIES

Unit Three: Uses and Functions of Computers

***COMPUTER STUDIES DEPARTMENT WHITE
ANGELS HIGH SCHOOL***

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O level Computer Studies Topic One: Introduction to Computer Studies
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Unit Objectives

(don't Write)



- To Identify and describe the different uses and functions of a computer in the areas of:
 - Education
 - Research
 - Business
 - Health
 - Communication
 - Military/security
 - Home
 - Entertainment / leisure
- Merits and Demerits of using computers in society.

Unit Introduction



- Computers have always assisted to solve the problems faced by mankind.
- Although the word ‘computer’ means ‘something which adds, counts, estimates or calculates’, a computer today is not merely a “calculator”.
- Computers perform a vast variety of jobs with tremendous speed and efficiency.
- Today people use computers in almost every walk of life.
- However, along with these advancements of science there arises the dilemma of development of technology as it affects human individuals.
- They have come with both positive and negative impacts to our society.

Areas of Application of computers in our society



- Computers are applied in the areas of
- 1) Education,
- 2) Research,
- 3) Business,
- 4) Health,
- 5) Communication,
- 6) Military/security,
- 7) Home and
- 8) Entertainment / leisure.

1. Uses of computers in the area of Education



1. In teaching, we use **Computer Assisted Instructions (CAI)** by use of Interactive whiteboards, and projectors, in class.
2. **Computer Aided Learning (CAL)** gives access to On-screen learning materials. Students learn at their own pace and can repeat a lesson they didn't understand.
3. **Computer Aided Assessment (CAA)** helps teachers to reduce the time and the labour to mark students' books and answer scripts.

1. Uses of computers in the area of Education



4. Error free School **Timetables** can be generated using special timetable computer software.
5. With Use of **S**chool **A**dministration and **M**anagement **S**ystems (**SAMS**), Records management is made easier because all details of learners can be held on computer, and easily retrieved, reducing administrative costs.
6. Students' Progressive **Report cards** can be produced electronically by use of computers instead of hand written ones.

1. Uses of computers in the area of Education



7. **Distance learning** through computer based training. People can study online and get awards such as degrees without going to class.
8. Teachers use **simulation** software to visualize and demonstrate difficult or dangerous experiments in class.
9. Use of special facilities for students with disabilities like text to speech and **speech recognition** to help blind students.
10. Interactive **Multimedia** packages on DVDs can clearly demonstrate and explain abstract concepts.

1. Uses of computers in the area of Education



11. Schools use computers to create school **websites** for sharing information with the public.
12. Productivity tools like desktop publishing and presentation software are used in **projects** and other school activities.
13. Computers are used for **calculating** mathematical arithmetic by students and teachers in class.
14. Digital computers are also used for telling and managing **time** in schools.

2. Uses of computers in the area of Research



1. They have made searching the literature and references easier through use of electronic databases on the World Wide Web.
 - For example an online encyclopaedia such as Wikipedia has over 15 times as many words as compared to printed Encyclopaedia and dictionaries.
2. Computers have tools such as Spell checking, copy-and-paste, etc., which make compiling and editing research work easier.

2. Uses of computers in the area of Research



3. A lot of statistical software is available for **performing calculations** and analysing the collected research data.
4. **Data Storage**: The data obtained from the research is easily stored in softcopies in computers as word documents or excel spread sheets.
5. **Research publishing**: The research work can be converted to **Portable Document Format (PDF)** and published to the World Wide Web.

3. Uses of computers in the area of Business



1. Computers enable people to Work from home, using computers connected to the employer's network or via the Internet. This is known as **Telecommuting**.
2. Computers have created more jobs such as Computer technicians, Computer teachers, etc.
3. Buying and selling of Computers and their components is a source of income to individuals, and companies.

3. Uses of computers in the area of Business



4. Through, Computer Aided Design (CAD), scale drawings, and excellent designs can be created easily.
5. Computers are used for sending and receiving Mobile Money and making world wide money transfers.
6. Banks use Computers to manage transactions and **Automatic Teller Machines ATMs** for 24 hour banking.

3. Uses of computers in the area of Business



7. Computers help in creating Business Advertisement through designing websites, billboards, flyers, etc.
8. Computers are used in typesetting during the production of document printouts and publication of Books for sale.
9. Through **C**omputer **A**ided **M**anufacture (**CAM**), computers can be used to control the production of goods in factories.
10. Computers are used for E commerce: through sale of goods and services over the internet.

4. Uses of computers in the area of Health



- 1. Hospitals use computers for managing and storing Records electronically, rather than paper files.**
- 2. Hospital Administration is also aided by printing labels, allocating beds, make appointments, staff rotas, e.t.c.**
- 3. Internet helps us get Web sites for information on health care, treatments, conditions, etc.**

4. Uses of computers in the area of Health



4. Monitoring/Diagnosis such as Heart rate, blood pressure, etc. is aided by Computer Expert systems.
5. Medical Training is facilitated by Simulation software and on-line data sources.

5. Uses of computers in the area of Communication



- 1. E-mail: Electronic Mail sent from one person to another using connected computers helps a lot in the area of communication.**
- 2. Video Conferencing enables people in different locations to conduct meetings as if they are in the same location.**

5. Uses of computers in the area of Communication



- 3. Computers are used for Faxing, Sending an image of a document electronically.**
- 4. Computers enable people to send voice, image, text data through Telephones and mobile cell phones:**
- 5. Social Networks such as Facebook and Twitter enable people to stay in touch with their relatives, friends and interests.**

6. Uses of computers in the area of security/Military



- 1. Computers aid monitoring security through cameras, Automatic number plate recognition, e.tc.**
- 2. Communication systems are widely used in the military to coordinate the personnel.**
- 3. Some computer systems can detect temperatures and alarm in case of danger of fire outbreaks.**

6. Uses of computers in the area of security/Military



- 4. Computers are used for capturing data for Police National Computer Databases –, vehicle number plates, criminals fingerprints, etc.**
- 5. Computers are used to detect presence of illegal devices such as bombs.**
- 6. Computers are also used for controlling dangerous weapons such as missiles.**

7. Uses of computers at home



- 1. Computers are used for doing School Assignments (Home Work)**
- 2. Computers are used for Managing household finances**
- 3. Computers are used for Accomplishing Work related tasks.**

7. Uses of computers at home



4. Computers are used to access the Internet for Email / news / information/Social media.
5. Computers are used for playback of Digital Media such as Video/ Music, Family Pictures at home
6. Programs for Children such as Computer Games at home

8. Uses of computers in the area of Entertainment / leisure



- 1. Computers introduced completely new type of entertainment like Computer games.**
- 2. Computers are also used in Cinema halls and podiums for faster instant audio and video playback and presentation through projectors.**
- 3. Computers are used in the entertainment industry to produce Music, Edit Video, CD burning, etc.**
- 4. Computers are used for instant audio playback functions such as parties.**

Demerits of using computers in society



- **Risk of addiction.** Many people don't care about anything else because they spend many hours in front of computer.
- **Eye Strain.** Using computer for long can be very harmful to the eyes.
- **Over dependence.** Our creativity, skills and reasoning can decrease when we are too dependant to the computer.
 - For instance, with email replacing the hand-written letter, Onscreen Art designing instead of Hand drawing Art etc.

Demerits of using computers in society



- Computer can **destroy the culture** of a certain group of people in the society, especially youths.
- **Expensive**. Computers are still costly because The initial costing and maintenance cost of a computer are very **high**.
- Need for **Extra Training**. Use of computers require additional training before use of computers and their programs.
- There is **dehumanizing of people**. Excessive use of computer for communication with others threatens to reduce the intensity of personal bond that often develops between people.
 - For instance, the telephone calls

Demerits of using computers in society



- Computers have led to **unemployment** of people such as Tellers, shop workers, postal workers; since many manual/repetitive jobs have been replaced by computers like ATMs
- **Electronic fraud**: Stealing money electronically through practices like Credit card cloning
- **Impact on Environment**: Computer manufacturing processes and computer waste are depleting natural resources and polluting the environment.

Demerits of using computers in society



- **Hacking:** Unauthorized access into computers possibly to access information, compromising privacy. E.g Wikileaks.
- **Software Piracy:** Stealing software, not paying for licenses through cracking.
- **Presence of Viruses:** You may lose all your programs, files, documents folders and other data on your computer because of virus infection on the computer.
- **Moral Decay:** The internet has websites with content such as pornography, which have a bad impact on the users especially the young children.
- Computers are **delicate** and they must be given a great care.