



Memory and Storage

LESSON PLAN

After this lesson, students will be able to:

- » Define a computer's memory.
- » State the need for memory in processing data.
- » Define the unit of memory. Calculate the computer's memory in different units.
- » List the two main types of memory.
- » Define primary memory.
- » State the two types of primary memory.
- » Describe and differentiate between ROM and RAM.
- » State the need for secondary memory.
- » Identify and describe different secondary storage devices.

WARM UP

- » Colour the devices that are used to store data.



Ans. Do it yourself.

CHAPTER NOTES

- » Computers help us store all the information in its brain, called Memory. It can remember everything for us for any period of time. Whenever we want, we can take out this stored information from the computer's memory.
- » Computer memory is the storage space in the computer where data is processed and instructions required for processing are stored.
- » Memory unit is the amount of data that can be stored in a storage unit.
- » The basic unit of computer memory is called a byte, which is a group of 8 bits.
- » A bit (binary digit) is the smallest amount of data that can be stored in a computer.
- » Primary memory holds only the data and instructions on which the computer is presently working. It is also called Volatile Memory as the data saved here is temporary in nature.
- » This memory is further divided into types: RAM (Random Access Memory) and ROM (Read Only Memory).
- » RAM is the internal memory of the CPU for storing data, programs and program results. It is a read/write memory which stores data until the machine is working. As soon as the machine is switched off, the data gets erased.
- » ROM stands for Read Only Memory. It is the type of memory from which we can only read but cannot write on it. This type of memory is non-volatile.
- » The motherboard is a single board that connects all of the parts of a computer together. It connects the CPU, memory chips, hard drives, optical drives, video cards, sound cards, etc., directly or through cables.

- » If we need to store a large amount of data or programs permanently, we need secondary memory. For storing information in secondary memory, we need secondary storage devices.
- » Hard disk is the most important secondary storage device in a computer.
- » Hard disks can be internal or external, but normally they are present inside the CPU box.
- » A hard disk comes with many different storage capacity options like 40 GB, 100 GB, 250 GB and 650 GB. The size of 1 TB or terabyte or more is also available these days.
- » CD stands for Compact Disc. CDs are circular disks that use laser rays to read and write data.
- » Different forms of CDs available are: Read only CD (CD-ROM), writable CD (CD-R) and re-writable CD or erasable CD (CD-RW).
- » The size and shape of a DVD is similar to that of CD. It is also an optical storage device. The only difference lies in their storage capacity.
- » The storage capacity of a DVD is around 4.7 GB. DVDs with dual-layer recording can store double the amount of data, that is, up to 8.5 GB.
- » The appearance and size of a Blu-ray disc is similar to a CD or DVD and is also a type of optical storage device. The storage capacity of a Blu-ray disc nowadays can be up to 128 GB.
- » Pen drive is a portable memory device. It is small in size and can be easily carried in your pocket. It is also called USB drive, key drive or flash memory.
- » A memory card, also called a flash memory card or storage card, is small and rectangular in shape.

DEMONSTRATION

- » Show how to use storage devices such as CD, DVD, pen drive and hard disk.

LAB ACTIVITIES

- » Open Word 2013. Type the following document. Also, insert pictures in the document either from the Internet or by copy-pasting self-drawn pictures from Paint.

- Title
- Memory is the storage capacity of a computer.
- Computer memory can be primary or secondary.
- Primary memory is also called the main memory or internal memory.
- Primary memory is of two types – RAM and ROM.
- RAM is volatile and ROM is non-volatile.
- Secondary memory is the permanent memory.
- Secondary memory uses different secondary storage devices like hard disk, CD, DVD, Blu-ray disc, pen drive, memory card, etc., to store data and information.

ASSESSMENT

Test the students on the following:

- (a) Definition of memory and storage devices.
- (b) Difference between RAM and ROM.
- (c) Names and description of the storage devices.

SUGGESTED CLASS ACTIVITIES

- » Students may be asked to make cut-outs of different memory devices and put them up on the display board along with their features.
- » Students should be encouraged to find out about companies that manufacture different storage devices and also the cost of these devices.