**Outline**

To research the history of computing technology and the development of individual hardware components. To prepare slides on a specific topic and present on the assigned to the class.

**Objectives**

* Describe the functions and features of the internal components of a computer (e.g., CPU, RAM, ROM, cache, hard drive, motherboard, power supply, video card, sound card);
* Use correct terminology to describe computer features and specifications (e.g., processor type, bus speed, storage capacity, amount of memory);

**Prerequisites**

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| --- | --- | --- | --- | --- |
| **Prerequisite Module(s)** | **Level** | **Student Initial** | **Teacher Initial** | **Date** |
| None |  |  |  |  |

**Materials**

* None.

**Level 0: Personal Computer Internals**

1. Create a labeled diagram of the inside of a typical personal computer.
   1. You can do it electronically or on paper.
   2. The diagram cannot be a single clip art from the web but may use individual images from the web.
   3. The labels and arrows to the various components must be drawn by you.
2. Labeling the Motherboard.
   1. Show the location of the CPU and CPU Fan.
   2. Show the location of the Memory Slots and RAM Memory
   3. Show the location of the on-board video, sound, Ethernet/Wireless and USB devices
   4. Show the location of the expansion slots and Video and Sound boards.
3. Labeling the Chassis Components.
   1. Show the location of Power Supply.
   2. Show the location of the External Hard Drives and connections to the Motherboard
   3. Show the location of the Removable Media Drives and connections to the Motherboard
   4. Show and label the external connector plate (i.e. where the monitor, keyboard, etc. are connected.)

**Level 1: History of Computers**

1. Research the history of “Mainframe Computers”. Make notes on the following:
   1. The first computers (e,g, UNIVAC) and how they were made.
   2. Computers in the 1960s and 1970s (e.g. IBM)
   3. Modern mainframe computers used by banks, government, and other large companies
2. Research the history of “Super Computers”. Make notes on the following:
   1. The first super computers (e,g, CRAY) and how they were made.
   2. Massively Parallel and Network Computers (e.g. Big Blue)
   3. Modern quantum computers and how they work
3. Research the history of “Personal Computers”. Make notes on the following:
   1. When was the first IBM PC introduced and what features did it have?
   2. What were some PCs before the IBM PC?
   3. When was the first Apple introduced and how was it different from the PC?
   4. How have modern PCs change since the earliest PCs?

**Level 2: History of Computer Components**

1. Research the history of the “CPU Chip”. Make notes on the following:
   1. When was the first CPU chip released (e,g, 8086) and who made it and what did it contain.
   2. What is an “Integrated Circuit” and how were computers made before ICs?
   3. How have CPU chips evolved since the 8086?
2. Research the history of “Computer Memory”. Make notes on the following:
   1. How is RAM memory used in PCs different from “Core Memory” used on early computers.
   2. What is “Moors Law” and how has RAM memory followed this law?
   3. How is RAM memory different from external memory (e.g. hard disks)?
   4. How has RAM memory evolved over time?
3. Research the history of “Video Cards”. Make notes on the following:
   1. What is VGA, when was it introduced and what features did it have?
   2. What came before VGA graphics?
   3. When were 3D graphics cards introduced and what were the first 3D cards like?
   4. How have graphics cards evolved over time?

**Level 3: History of Operating Systems**

1. What is a “Operating System”?
   1. How is it different from a software program
   2. What is a “Driver”?
   3. What is a “Service”?
2. Research the history of the “Windows” operating system. Make notes on the following:
   1. What is DOS and how is it related to Windows?
   2. What was the first version of Windows, when was it released and what did it contain?
   3. Compare the history of the Apple OS with Windows?
   4. How has Windows evolved over time?
3. Research the history of “UNIX”. Make notes on the following:
   1. What is UNIX and what is the history of UNIX.
   2. What is LINUX and how is it related to UNIX?
   3. How is UNIX related to the Apple OS?

**Level 4: Presentation**

1. Create a full PowerPoint (or equivalent) presentation on the topic assigned by your teacher.
   1. The presentation should be 5 to 10 minutes in length

**Achievement Record**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attainment Level** | **Student Initial** | **Teacher Initial** | **Date** |
| Level 0: PC Internals Diagram |  |  |  |
| Level 1: History of Computers |  |  |  |
| Level 2: History of Computer Devices |  |  |  |
| Level 3: History of Operating Systems |  |  |  |
| Level 4: Presentation |  |  |  |