**Student Questions**

Learn about the internals of a standard PC case by examining physical samples and selecting and labeling images found on-line. Gain deeper knowledge by researching and reporting on specific components.

PC Tower Case

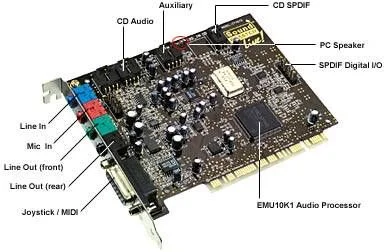
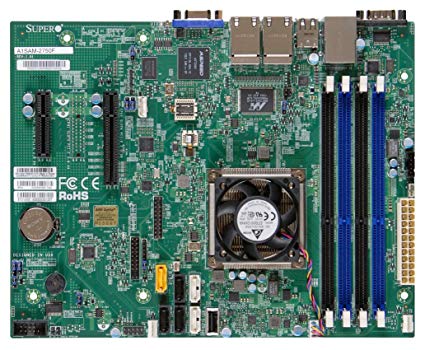
Find one (or more) images that clearly show the internals of a PC Tower Case.   
(i.e. Google images using keywords “PC Case Internals”)  

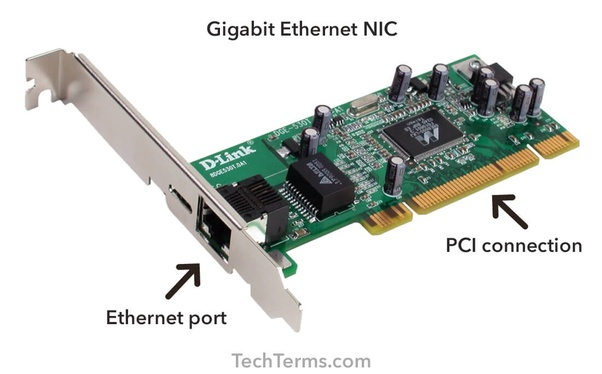

1. Clearly label the following components (using arrows) on your image of the PC case internals:
   * Motherboardo
   * Power Supply
   * Hard Disk Drive
   * Optical Disk Drive (e.g.DVD)
   * USB Expansion Ports
   * Monitor Port
   * Audio Ports
   * Ethernet Port
   * Cooling Fan
2. Research more in-depth about “Hard Disk Drives”. Make notes on the following:

General info:

* Is the main and usually the largest data storage with the hardware device in the computer
* Operating system, software titles and other files are stored there
  + What different versions are currently available (speed and capacity)?
* Parallel Advanced Technology Attachment (PATA)
* Serial ATA (SATA)
* Small Computer System Interface (SCSI)
* Solid State Drives (SSD)
* Usually have a capacity of 1 and 10 terabyte
* They have a seek time usually between 10 and 20 milliseconds
  + How the capacity of the component has changed since the 1980’s  
    The capacity of the hard disk drives massively increased as in 1980 the minimum HDD size in MB was 5 and the max was 2520
  + Now the capacity sixe is much larger as they have increased the capacity in 2019 to 2400000 MB and 16000000 MB

PC Motherboard

1. Find one (or more) images that clearly show the layout of a PC Motherboard.   
   (i.e. Google images using keywords “PC Motherboard  
   
2. Clearly label the following components (using arrows) on your image of the PC motherboard:
   1. CPU (and fan)
   2. RAM Memory
   3. Disk Drive Interface (IDE or SATA)
   4. GPU Graphics Processor (either on-board or Graphics Card)
   5. Sound Processor (either on-board or Sound Card)
   6. Wi-Fi / Ethernet Network Interface (either on-board or Graphics Card)



1. Research more in-depth about “CPU Processor Chip”. Make notes on the following:
2. What different versions are currently available (speed and capacity)

* Intel and Advanced Micro Devices are the two main companies that design CPU processor chips
* Intel has different versions such as intel Celeron (speed: 266MHz to 3.6 GHz,) intel Pentium, and intel core
* AMD has different versions such as Sempron, Athlon and AMD Phenom

1. How the speed of the component has changed since the 1980’s

* Many more CPU processor chips were released after the 1980s and their speeds were drastically increased

Peripheral Devices

1. Find one (or more) images that clearly show the layout of the back of a typical PC tower case.   
   (i.e. Google images using keywords “Back Of PC Tower”)  
   
2. Clearly label the following components (using arrows) on your image of the back of a typical PC tower case:
   1. Power cord and power switch
   2. Monitor Interface (VGA or DVI or HDMI)
   3. Mouse Interface (USB or PS/2)
   4. Keyboard Interface (USB or PS/2)
   5. USB Ports
   6. Audio Inputs / Outputs
   7. Ethernet Interface

1. Research more in-depth about “External Portable Storage”. Make notes on the following:
2. Floppy Disks

* It is a small disk drive which is used for data transfer, storage, and backup od small amounts of data

1. CD-ROM / DVD / Recordable CD/DVD

* It is a CD that can be read only by a computer which has a optical drive. It includes data that computers can read
* Used a lot during 90s for distribution of software and data for computers

1. USB Memory Drives

* It is a data storage device that can be removed and rewritten and are much smaller than disks

1. Compact Flash Memory

* Used mainly in portable electronic devices
* It is a mass storage device (memory card)

1. Cloud Based Storage

* It is a network of connected data servers which together used to share and access your files across devices

**Presentation Outline**

Explore the development and features of a specific PC hardware component through deeper research and investigation. Work in partners to create a short presentation. Deliver the presentation to the class.

Each group will research a unique PC hardware component. Your specific topic will be assigned from the list provided below.

**Presentation Structure**

1. Explain what the PC component does and how it fits together with other components to make up a fully functioning PC.
2. Explain how the PC component works. Provide a diagram (image) showing the main parts of the component.
3. Research the current state of the art of the component in terms speed, capacity (size), and other related factors.
4. Research on-line suppliers that sell the PC Component. List the specifications for the available products and the cost (price).
5. Research how the PC component has changed and evolved since the early days of PCs in the 1980’s. Cover each of the following topics separately:
   1. Component Speed
   2. Component Size / Capacity
   3. Two other specifications specific to the PC component (ask Mr. Nestor)

**PC Component Topics**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Partner 1** | **Partner 2** |
| CPU Microprocessor Chip |  |  |
| Motherboard Layout |  |  |
| Computer Graphics |  |  |
| Sound & Audio |  |  |
| Hard Disk Drives |  |  |
| Removable Disk Storage |  |  |
| Ethernet / Fiber Connectivity |  |  |
| Wifi / Bluetooth Connectivity | Keerat | Liban |
| Mouse / Pointing Devices |  |  |
| Monitor & Display Technology |  |  |
| Printers & Output Technology |  |  |