**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

1. Find one (or more) images that clearly show the internals of a PC Tower Case.   
   (i.e. Google images using keywords “PC Case Internals”)
2. Clearly label the following components (using arrows) on your image of the PC case internals:
   1. Motherboard
   2. Power Supply
   3. Hard Disk Drive
   4. Optical Disk Drive (e.g.DVD)
   5. USB Expansion Ports
   6. Monitor Port
   7. Audio Ports
   8. Ethernet Port
   9. Cooling Fan
3. Research more in-depth about “Hard Disk Drives”. Make notes on the following:
   1. What different versions are currently available (speed and capacity)
   2. How the capacity of the component has changed since the 1980’s

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

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**

* A floppy disk is a magnetic storage medium for computer systems.

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

* DVD-RW discs are slightly less compatible than DVD-R.
* It Can only be used in DVD Recorders and Burners that support DVD-RW recording or multi-format recording.

1. **USB Memory Drives**

* A USB flash drive is also known as a USB stick.
* USB thumb drive, it is a plug-and-play portable storage device that uses flash memory and is lightweight enough to attach to a keychain.

1. **Compact Flash Memory**

* A Compact Flash card (CF card) is a memory card format developed by SanDisk in 1994.
* Which uses flash memory technology to store data on a very small portable device.

1. **Cloud Based Storage**

* Cloud storage is a service model in which data is maintained, managed, backed up remotely and made available to users over a network (typically the Internet).

**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.

* A disk drive is a technology which enables the reading, writing, deleting and modifying of data on a computer storage disk.
* The way it fits together with other components is that it has four key components inside its casing -- the platter (for storing data), the spindle (for spinning the platters), which is a mechanical device that takes energy, its usually created with air and electricity. Read/write arm (for reading and writing data) and the actuator (for controlling the actions of the read/)

1. Explain how the PC component works. Provide a diagram (image) showing the main parts of the component.

* Motherboard. The motherboard is an important **computer** component because it's what everything else connects to! ...
* Power Supply. True to its name, the power supply powers all other **components** of the machine. ...
* Central Processing Unit (CPU) ...
* Random-access Memory (RAM) ...
* Hard Disk Drive / Solid State Drive. ...
* Video Card. ...
* Optical Drives.

1. Research the current state of the art of the component in terms speed, capacity (size), and other related factors.
2. The first **hard disk drive** (RAMAC 305 produced by IBM) back **in** 1956 could store 5MB of data, which **was** a huge amount at the time. This is coincidentally also the size of the first “small” 5.25-inch **hard disk drive** that arrived **in 1980.**

More info in this link. <https://royal.pingdom.com/amazing-facts-and-figures-about-the-evolution-of-hard-disk-drives/>

1. Research on-line suppliers that sell the PC Component. List the specifications for the available products and the cost (price).
2. 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**

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