**Overview**

Work individually to understand and establish the specifications for a PC dedicated to a specific task or application.

My PC application topic Is: Gaming computer

Answering the student questions will help you to develop a deeper understanding of the main components of a personal computer. It will also help you to identify the features that are most important for your specific PC application topic and the features that are nice to have but are not as critical for your topic.

Preparing a brochure explaining your PC application topic and your selection of personal computer components and features will help you to summarize what you have learned from the student questions. The brochure will also help you to share your findings in a “tradeshow” to be held in class.

The date for the “tradeshow” is:

**Student Questions**

1. Think about your PC application topic. Do some research to find general answers to the following questions.
   1. How important is computer speed for my topic ( High/ Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.

It depends on the game. New releases require a higher powered CPU in order to run them because they require many complex calculations to be done. Older games will take less computing power than newer games because the game program would be less complex

* 1. How important is data storage for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.

Data storage is somewhat important for video games. Most games take anywhere from 25 Gb to 200 Gb. Depending on the type of hard drive you would like (HDD or SSD), the importance of the hard drive may vary.

* 1. How important is graphics and sound for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.

Graphics are especially important for video games. Having a dedicated graphics card allows the CPU to work on processing the game rather than the graphics of the game resulting in smoother gameplay. Sound is somewhat important when it comes to video games. Most people use headphones while playing video games so having a sound card is often unnecessary when building a gaming pc since the quality of the headphones you would buy is more important.

* 1. How important is internet connectivity for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.

Internet connectivity is another debatable component when it comes to pc gaming. Some games do not require an internet connection so this would depend on the games the user wants to play. However, games that are reliant on internet connectivity would be highly reliant on them in order to allow the user to keep a low ping to prevent lag input and output

1. CPU Processor Chip
   1. What speed of CPU Chip do you require? (High / Medium / Basic)

High speed to run games. Games require a lot of computing power since a lot of calculations are being made and changing every second

* 1. Provide an example of a high speed CPU using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

Intel Core i9-9900k, Price:$649.99, Vendor Newegg. Has a max turbo frequency of 5.0 GHz, provides 3.6 Ghz, 8 core and 16 threads

Provide an example of a medium speed CPU using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

Model

Intel core i7-4790k, $494.17, newegg, quad core with eight threads, turbo to 4.4 GHz, 8MB cache

* 1. Provide an example of a basic speed CPU using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

Intel pentium gold, $89.99, newegg, dual core, low energy consumption and up to 3.7 GHz

* 1. What would be the least expensive CPU Chip that meets your requirements? List the Model Number, Price, and Vendor Source.

Intel Core i5-9400F, 199.99, newegg, max turbo of 4.1GHz, 2.9GHz average

1. RAM Memory
   1. What size of RAM Memory do you require? (Large / **Medium** / Basic)

Medium, running programs are stored on the RAM meaning all of the calculations for the game would be stored there.

* 1. Provide an example of a large size RAM using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

ridentZ RGB Series 16GB, $124.99, newegg, DDR4 3200, has RGB lighting

* 1. Provide an example of a medium size RAM using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

CORSAIR Vengeance 12GB (3 x 4GB), $83.99, newegg, DDR3 1600

* 1. Provide an example of a basic size RAM using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

G.SKILL Ripjaws V Series 8GB, $59.99, newegg, DDR43200

* 1. What would be the least expensive RAM Memory that meets your requirements? List the Model Number, Price, and Vendor Source.

G.SKILL Ripjaws V Series 8GB, $59.99, newegg, DDR43200

1. Graphics Card
   1. What graphics speed and resolution do you require? (High / Medium /Basic - On Motherboard)

High, games require a strong and powerful graphics card in order to process complex graphics with minimal lag

* 1. Provide an example of a high-end Graphics Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

MSI GeForce RTX 2080, $1013.00, newegg, has a hybrid cooler, 8GB 256 bit, 1515 MHz core clock, 1860

MHz boost clock

* 1. Provide an example of a medium-end Graphics Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

MSI GeForce RTX 2060, $599.99, newegg, 8GB 256-Bit, Boost Clock 1650 MHz

* 1. What would be the least expensive Graphics Card that meets your requirements (or do you just need basic graphics provided by the motherboard)? List the Model Number, Price, and Vendor Source.

ASUS ROG STRIX GeForce GTX 1060, $351.99, newegg, 6GB 192 bit, 1544 MHz clock, 1733 MHz boost clock

1. Sound Card
   1. Do you require special sound support? (High / Medium /Basic - On Motherboard)

Extra sound support is not required because most gamers use headphones which would be connected to the motherboard

* 1. Provide an example of a high-end Sound Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

Creative Sound Blaster Z, $114.99, newegg, PCI Express x1, 5.1 Channels, TOSLink Optical Input and

Output, Sound Core 3D Processor, Beamforming Microphone

* 1. Provide an example of a medium-end Sound Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

Creative Sound Blaster Audigy, $68.69, newegg, 5.1 Channels, 24-bit 192KHz, PCI Express x1 Interface

* 1. What would be the least expensive Sound Card that meets your requirements (or do you just need basic sound provided by the motherboard)? List the Model Number, Price, and Vendor Source.

Only basic sound provided by the motherboard is necessary, sound cards do not make much of a

difference compared to quality headphones

1. Motherboard
   1. Do you require any special motherboard features (based on your answers to the above questions)?

You don’t really need a high-end motherboard you just need a good quality 1

* 1. Provide an example of a high-end Motherboard using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

ROG STRIX B350-F GAMING, $399.99, newegg, has RGB lighting, has stronger metal framing for heavier GPUs, able to support overclocking for CPUs, also holds up 64 GB of DDR4 RAM

* 1. Provide an example of a basic Motherboard using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

MSI ARSENAL GAMING B450M BAZOOKA V2, $114.99, newegg, micro ATX

* 1. What would be the least expensive Motherboard that meets your requirements? List the Model Number, Price, and Vendor Source.

MSI MPG X570 GAMING PLUS Gaming Motherboard, 229.99, newegg, supports AMD processors

1. HDD (Hard Disk Drive or Solid State Drive)
   1. Do you require any special Hard Disk Drive features (based on your answers to the above questions)?

A good SSD allows games to run at optimal performance

* 1. Provide an example of a high-end HDD using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

WD Blue 3D NAND 1TB Internal SSD - SATA III 6Gb/s, 149.99, newegg

* 1. Provide an example of a basic HDD using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

Silicon Power Ace A55 2.5" 512GB SATA III, $79.99, newegg

* 1. What would be the least expensive Hard Disk Drive that meets your requirements? List the Model Number, Price, and Vendor Source.

Silicon Power Ace A55 2.5" 256GB SATA III, $46.99, newegg

1. Removable Media (DVD / USB / Flash)
   1. Do you require any special Removable Media features? Explain what extra features are required for your PC application topic.

No, most games are downloaded online rather than bought on disk

* 1. If so, List the Model Number, Price, and Vendor Source for any of these extra features.

1. Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth)
   1. Do you require any special Network Interface features? Explain what extra features are required for your PC application topic.

No, these are already built into the motherboard

* 1. If so, List the Model Number, Price, and Vendor Source for any of these extra features.

1. Monitor, Mouse, Keyboard
   1. Do you require any special Monitor, Mouse, Keyboard, etc. add-ons? Explain what extra features are required for your PC application topic.

Yes, a good monitor is necessary to reduce input lag, keyboard and mouse depends on the user since

some may prefer to play with a controller

* 1. If so, List the Model Number, Price, and Vendor Source for any of these extra features.

LG 32UD59-B 32" 4K UHD LED Monitor, $442.88, newegg, 3840 x 2160 4K UHD 5ms, DCI-P3 95% Color

Gamut, 60Hz refresh rate

1. Portability / Mobility
   1. Will you be using your PC in one place, do you need some portability, or do you need a high degree of mobility? Explain the need for portability your PC application topic.

No, gaming is not required to be portable since you would stay with your internet source.

* 1. Do you require a Desktop / Laptop / Notebook or other PC format?

This also depends on whether or not the user prefers to use keyboard and mouse or controller.

* 1. How will this affect the cost of your dream machine.

It will not affect the cost.

1. Rank each personal computer component in order of priority (1-lowest, 10-highest) based on your research above. Each component must have its own priority number… no duplications.
   * CPU Processor Chip 1 2 3 4 5 6 7 8 9 10
   * RAM Memory 1 2 3 4 5 6 7 8 9 10
   * Graphics Card 1 2 3 4 5 6 7 8 9 10
   * Sound Card 1 2 3 4 5 6 7 8 9 10
   * Motherboard 1 2 3 4 5 6 7 8 9 10
   * HDD (Hard Disk Drive or Solid State Drive) 1 2 3 4 5 6 7 8 9 10
   * Removable Media (DVD / USB / Flash) 1 2 3 4 5 6 7 8 9 10
   * Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth) 1 2 3 4 5 6 7 8 9 10
   * Monitor, Mouse, Keyboard 1 2 3 4 5 6 7 8 9 10
   * Portability / Mobility 1 2 3 4 5 6 7 8 9 10

**Brochure**

Work individually to create a 4 page brochure according to the following guideline.

**Page 1 – Your Application Topic**

Describe your topic and the top PC components for your topic.

Include the following on this page:

* Describe your application topic and how a PC is used
* In general terms, describe what the best PC for this application would look like (e.g. speed vs portability)
* Describe in more detail the top three most important PC components and explain why they are important for your application

**Page 2 – Would-Be-Nice Features**

Describe your decisions about what PC components are less important but would be nice to upgrade if you had the money.

Include the following on this page:

* Describe the would-be-nice components (just below your top 3 priorities) and what your options for upgrading them would be.
* Describe the components / features at the bottom of your priority list and why you would not spend extra money on them.
* Provide some details about different vendors / suppliers and the options they offer.

**Page 3 – Your Budget Machine**

Your budget is $800. Select a pre-packaged PC or customize / build a PC from parts to fit under this budget.

Include the following on this page:

* Your PC specs, model, cost, vendor, etc.
* Priority components that you were able to include for this price.
* Priority components that you had to leave out because of budget limitations.

**Page 4 – Your Dream Machine**

Your budget is $2000. Select a pre-packaged PC or customize / build a PC from parts to fit under this budget.

Include the following on this page:

* Your PC specs, model, cost, vendor, etc.
* Priority components that you were able to include for this price.
* Priority components that you were able to spend extra on.
* Also comment on any priority components that you had to leave out or down-grade.

**Appendix A: PC Vendors, Parts, & Customization**

Suggested on-line computer sources:

* [www.newegg.ca](http://www.newegg.ca)
* [www.dell.com/en-ca](http://www.dell.com/en-ca)
* [www.tigerdirect.ca/](http://www.tigerdirect.ca/)
* [www.canadacomputers.com](http://www.canadacomputers.com)

**Appendix B: Application Topics**

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| --- | --- |
| **Task** | **Student Name** |
| ***Game Computer*** |  |
| **Photo Editing & Organization** |  |
| ***Business Office Computer*** |  |
| ***Student Home Computer*** |  |
| ***Factory Floor Computer*** |  |
| ***Media Production and Streaming Computer*** |  |
| ***Web Surfing Computer*** |  |
| ***Game Computer*** |  |
| **Photo Editing & Organization** |  |
| ***Business Office Computer*** |  |
| ***Student Home Computer*** |  |
| ***Factory Floor Computer*** |  |
| ***Media Production and Streaming Computer*** |  |
| ***Web Surfing Computer*** |  |
| ***Game Computer*** |  |
| **Photo Editing & Organization** |  |
| ***Business Office Computer*** |  |
| ***Student Home Computer*** |  |
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| ***Web Surfing Computer*** |  |