





COMPUTER LAB PLAN: EQUIPMENT LIST AND BUDGET



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Computer Lab Equipment List and Budget

Item:	Description:	Quantity:	Cost:
<p>Student Workstation</p> 	<p>For complete details of this workstation, please refer to the Student Workstation Proposal for Anycity High School Computer Lab, which is attached to this Equipment List and Budget</p>	25	\$983.85 *Per workstation
Total workstation cost:			\$24,596.25
<p>Teacher Portable Computer</p>  <p>http://www.newegg.com/Product/Product.aspx?Item=N82E16834200350</p>	<p>DELL Alienware M18x Notebook Intel Core i7 2630QM(2.00GHz) 18.4" 8GB Memory DDR3 1333 1TB HDD Slot-Load Dual Layer DVD+/-RW NVIDIA GeForce GTX 460M</p>	1	\$2,149.99
Total Instructor Computer cost:			\$2,149.99
<p>Docking Station</p>  <p>http://www.newegg.com/Product/Product.aspx?Item=N82E16834994276</p>	<p>Universal compatibility with all brands of laptops via USB: Acer, Apple, Asus, Compaq, Dell, Gateway, HP, IBM, Lenovo, Sony, Toshiba and more 4 USB 2.0 ports on the back allow you to connect multiple USB devices such as a printer, mouse and keyboard, plus a convenient front USB port for external</p>	1	\$46.99
Total Docking Station cost:			\$46.99
<p>Additional Instructor Monitor</p>  <p>http://www.newegg.com/Product/Product.aspx?Item=N82E16824236052</p>	<p>ASUS VH242H Black 23.6" 5ms HDMI Full 1080P Widescreen LCD Monitor 300 cd/m2 ASCR 20000:1 (1000:1) W/Speakers</p>	1	\$179.99
Total Additional Monitor cost:			\$179.99

Splitter



Tripp Lite's 1 ft. DVI Monitor "Y" Splitter cable provides an inexpensive alternative for splitting the video signal from your PC's DVI port to two DVI enabled monitors. Tripp Lite Lifetime Warranty.

1

\$21.99

<http://www.newegg.com/Product/Product.aspx?Item=N82E16882750035>

Total Splitter cost:

\$21.99

Cat6 Cable, 1000 ft



Cable Type: UTP (Unshielded Twist Pair Cable)
High density polyethylene insulated PVC jacket
Wire Type: Solid Copper Conductor
Wire Gauge: 24 AWG and 4 pairs
Provides hi-speed data transfer to 550Mhz
Colored PVC Outer Jacket
Verified Compliant with EIA/TIA Standard by UL and ETL

1

\$102.99

*any equipment left over remains the property of Anycity High School

<http://www.newegg.com/Product/Product.aspx?Item=N82E16812270127>

Total Cat6 Cable cost:

\$102.99

EZRJ45 Cat6 Clips, 500 pack



telephoneparts.com

For use in Cat 6 compliant data networks. Category 6 performance per EIA/TIA B.2. Works with solid or stranded wire. Faster terminations with reduced scrap. FCC compliant, UL rated. Simple one piece design, no bars or liners.

1

\$295.00

*any equipment left over remains the property of Anycity High School

<http://www.telephoneparts.com/index.cgi?pcode=PLT-100010D>

Total EZRJ45 Cat6 Clip cost:

\$295.00

Cable Crimping/Cutting Tool



Use for RJ11 (1-, 2- or 3-pair) and RJ45 (4- 2 pair) modular plugs.

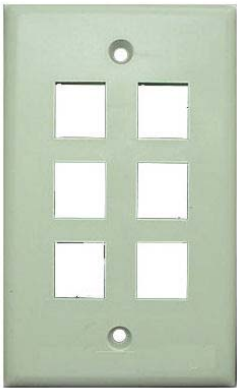
Application/Usage:
Crimping
Cutting
Stripping

\$23.99
*any equipment left over remains the property of Anycity High School

<http://www.newegg.com/Product/Product.aspx?Item=N82E16899196009>

Total Cable Tool cost: **\$47.98**

Faceplate



Wall plate for use in conjunction with gang box and keystone-type connections. Use appropriate keystones to create a nicely finished, professionally installed look for ethernet networks or Home Theater interconnects. Eliminate that cluster of wires and hid them behind a wall.

Keystone connections available: Ethernet (Cat5/6), Phone (RJ11), Coax (RG-6), RCA/Component Video, RCA/Audio, RCA/Digital Audio, S-Video, Speaker (Banana Plugs), and BNC.

10
\$.088
*any equipment left over remains the property of Anycity High School

http://www.mycablemart.com/store/cart.php?m=product_detail&p=1979

Total Faceplate cost: **\$8.80**

Keystone Cat6 Jacks



Connector Details:
RJ-45 Female
110-punchdown

Additional Information: Blue Channel Certified
Certifications & Standards: EIA/TIA-568

75
\$3.99
*any equipment left over remains the property of Anycity High School

<http://www.newegg.com/Product/Product.aspx?Item=N82E16812999158>

Total Keystone Jack cost: **\$299.25**

Raceways



<http://cableorganizer.com/premiere-raceway/>

Equipped with adhesive backing for fast and easy installation
Surface is paintable (using latex paint) to easily blend in with walls or fixtures
Low cost solution to providing fast and easy wire management
Available in 4 standard channel lengths to accommodate a wide range of wires and cables
Smooth, easy to clean surface
50 foot spools

2

\$62.30
*any equipment left over remains the property of Anycity High School

Total Raceway cost:

\$124.60

Cat6 Patch Panel



<http://www.newegg.com/Product/Product.aspx?Item=N82E16812998067>

Category 6
UL approved
Ports clearly numbered both on front and back
Labels on front enable each port to be named
Color coded label on back offers both EIA/TIA 568A & 568B wiring
Metal frame
EIA/TIA 2/32 spacing
Rack mountable on a 19 rack (1U of space)
Tripp Lite warrants this product to be free from defects in materials and workmanship for life

2

\$60.99

Total Patch Panel cost

\$121.98

Network Rack



<http://cableorganizer.com/computer-cabinets/wall-mount-cabinets-402.htm>

Designed with internal mounting rails tapped for #12-24 mounting screws in accordance with EIA standards
Comes complete with equipment mounting screws
Front door is reversible for left or right side opening. Key lock pre-mounted on door
Comes equipped with front mount rails.
Meets or Exceeds EIA-310D Standards
18 inch model

1

\$305.34

Total Network Enclosure cost:

\$305.34

48 Port Switch



<http://www.newegg.com/Product/Product.aspx?Item=N82E16833150061>

Cisco Small Business ESW500 ESW-520-48-K9 Switch 10/100Mbps + 1000Mbps 48 x 10/100 ports 2 x 10/100/1000BASE-T 2 x SFP ports

1

\$771.99

Total Port Switch cost:

\$771.99

UPS



CyberPower Intelligent LCD Series
GreenPower UPS CP1350AVRLCD 1350
VA 810 Watts 4 x 5-15R Battery/Surge
Protected 4 x 5-15R Surge Protected
Outlets UPS

2

\$133.99

<http://www.newegg.com/Product/Product.aspx?Item=N82E16842102070>

Total UPS cost: **\$267.98**

Server for all lab functions



Lenovo ThinkServer TS130 Tower Server
System Intel Xeon E3-1245 3.30GHz 4GB
1 x 500 GB 7200 RPM 3.5" DC 11051EU

1

\$779.99

<http://www.newegg.com/Product/Product.aspx?Item=N82E16859106098>

Total Server cost: **\$779.99**

Server OS



Reduced Effort to Administer and Support
Web-Based Applications
Reduced Support and Troubleshooting
Effort
Improved File-Transfer Services
Ability to Extend Functionality and Features
Improved .NET Support
Improved Application Pool Security
IIS.NET Community Portal

1

\$1,099.99

<http://www.newegg.com/Product/Product.aspx?Item=N82E16832116853>

Total Server OS cost: **\$1,099.99**

Workstation Software
*in addition to Windows OS, Microsoft Office and
Norton Antivirus included in workstations



Adobe Suites: 5 Licenses to be shared
through network.

5

\$2,499.99

Includes Dreamweaver, Photoshop, Flash
and Illustrator, among others

ADOBE SUITES

[http://www.newegg.com
/Product/Product.aspx?
Item=N82E16832105908](http://www.newegg.com/Product/Product.aspx?Item=N82E16832105908)

Total Workstation Software cost:

\$12,499.95

Network Printer



XEROX Phaser Series 3600/DN Personal
Up to 40 ppm Laser Printer w/network print

2

\$374.99

[http://www.newegg.com
/Product/Product.aspx?
Item=N82E16828118525](http://www.newegg.com/Product/Product.aspx?Item=N82E16828118525)

Total Printer cost:

\$749.98

Network Scanner



Canon ScanFront 300P 4575B002 24 bit
CIS 600 dpi Sheet Fed Compact Network
Scanner with Fingerprint and LCD Panel

2

\$1,859.99

[http://www.newegg.com
/Product/Product.aspx?
Item=N82E16838111067](http://www.newegg.com/Product/Product.aspx?Item=N82E16838111067)

Total Scanner cost:

\$3,719.98

Printer/Scanner Stands



Reinforced shelves are constructed to accommodate most laser or inkjet printers up to 75 lbs.

4

\$40.17
*when bought in bulk

Height adjusts in 1 1/4" increments for personal comfort level.

Desk-side stand includes organizing storage drawer for supplies.

http://www.shoplet.com/Kantek-Mobile-Printer-Stand/KTKPS540/spdv?ci_src=14110944&ci_sku=KTKPS540

Total Stand cost: **\$160.68**

Projector (Smartboard)



3LCD projection
WUXGA resolution (1920 x 1200)
Perfect fit to adjust four corners of the image individually
Full connectivity
Security features including PIN lock, MyScreen lock and transition detector
Projector management via SNMP
Featuring network bridge
Advanced networking with LAN
HD ready
Manual lens shift
Auto vertical keystone
Input Source Naming
Laptop compatible

1

\$4,795.00

<http://www.smart-boards.com/?gclid=Clf12PWlm6wCFRjX7AodDzJXIQ>

Total Projector cost: **\$4,795.00**

Screen



Elliptical extruded aluminum case with domed endcaps and white finish
Floating gunlatch wall brackets grip the screen securely and are barely visible.
NTSC, HDTV and WideScreen format have image area framed with black on all four sides.
Can be furnished with any standard control option (IR control may be built in).
Depending on surface, available in sizes through 96" x 96" and 10' diagonal NTSC.
Custom sizes available
Warranted for one year against defects in materials and workmanship.
12" of extra black drop at the top of the screen

1

\$514.06

<http://www.projectorscreenstore.com/Projector-Screens/Draper-Salara-overall-size-65-HDTV-Matt-White-132085-25327.html>

Total Screen cost: **\$514.06**

Surge Protectors



The CyberPower 7050SG is a Home/Office Computer Surge Protector with seven (7) total surge protected outlets and four (4) Energy-Saving outlets designed to turn off up to three connected devices when your computer is shut down or goes into standby mode. With One-In / Two-Out phone/fax/modem protection, the CyberPower 7050SG

5 \$19.99

<http://www.newegg.com/Product/Product.aspx?Item=N82E16812220052>

Total Surge Protector cost: \$99.95

Workstation Desks



Sturdy tubular steel frame
High-pressure laminate work surface
Open front plastic book box
Adjustable desk height

25 \$56.95

<http://www.schoolsin.com/ABC-P500-Series-Soft-Rectangle/ABC-P507.html>

Total Workstation Desk cost: \$1,423.75

Instructor Desk



Sturdy steel frame with modesty panel
Durable high-pressure laminate work surface
Locking left pedestal with two drawers

1 \$269.75

<http://www.schoolsin.com/ABC-T4LX.html>

Total Instructor Desk cost: \$269.75

Conference Table



48" x 96" Tabletop
"Quick Connect" assembly -- No tools required!
Scratch-resistant powder coated paint finish on frame
Thermofused melamine finish on tabletop
Durable steel base & frame
Self edge banding
Tabletop comes in 3 pieces

1 \$539.95

<http://www.schoolsin.com/OFM-55118.html>

Total Conference Table cost: \$539.95

Workstation Chairs



Global 22396BKPB04 Goal Series Low Back Armless Task Chair, Swivel, Tilt, Stone Fabric

25

\$116.06

<http://www.amazon.com/Pebbles-Stone-Global-Total-Office-Pneumatic/dp/B001Q8XFF2>

Total Workstation Chair cost: **\$2,901.50**

Instructor Chair



Chrome finish steel frame. Black leatherette seat and back. Adjustable height. Height adjusts from 31 1/2" to 35". 19" wide. 23 1/2" deep.

1

\$230.91

http://www.lampsplus.com/products/zuo-scout-black-armless-office-chair_t2475.html

Total Instructor Chair cost: **\$230.91**

Floor Cable Cover



Speed Nub Safety Bumps are an excellent tool for alerting inattentive drivers, which makes them ideal for controlling speed increasing awareness in high-traffic applications. Teamed together with high capacity cord covers, they're perfect for battling against wire damage and potential danger to pedestrians. Their compact design and easy installation make Safety Bumps a no-brainer when you need to increase the safety of your street application.

1

\$24.92

<http://cableorganizer.com/speed-nubs-rumble-strips/>

Total Floor Cable Cover cost: **\$24.92**



SynchronEyes classroom management software connects a teacher's computer with every computer in a networked classroom. You can communicate, monitor or collaborate with students individually or as a group, so everyone gets the most out of class time.

1 \$779.00



Memorizing your computer's settings and configuration, Deep Freeze returns your system to its original state with every restart.

25 \$887.50

Total Lab Mgmt Software cost: \$1,666.50

Wireless Router/Hub



TRENDnet's 450Mbps Wireless N Gigabit Router, model TEW-691GR, redefines wireless router performance. This router's raw horsepower seamlessly streams HD movies to your entertainment center, transfers content from countless users, and generates record wireless coverage.

1 \$99.99

Gigabit Wide Area Network and Local Area Network ports transfer wired data fast. An Energy Star certified power adapter and embedded GREENnet technology reduce power consumption.

<http://www.newegg.com/Product/Product.aspx?Item=N82E16833156286>

Total Wireless Router cost: \$99.99

Cat6 Patch Cable



TRIPP LITE N201-003-YW 3 ft. Cat 6 Yellow Cat6 Gigabit Snagless Patch Cable

2 \$3.99






For use in running patch panel to switch

<http://www.newegg.com/Product/Product.aspx?Item=N82E16812120488>

Total Patch Cable cost: \$7.98

TOTAL LAB COST: \$60,925.95

Student Workstation Proposal for Anycity High School Computer Lab

Part	Price	Source	Need/Specifications	Image
Power supply	19.99 (on sale)	http://www.newegg.com/Product/Product.aspx?Item=N82E16817170010	With the lower end of possible power supply ranging around 300W for a typical home computer, this power supply provides 550W to power the components of this computer described below and serves our multimedia and multitasking needs. Its specifications are 2 x 80mm fans, 20+4 Pin, single +12V rail, 2 SATA power connectors, surge protection, input voltage 100-240V and an input frequency range of 50/60Hz.	 <p>*cables and connectors are included with purchase</p>
Motherboard and CPU Bundle	199.98 (discount when purchased together)	http://www.newegg.com/Product/ComboDeals.aspx?Item=N82E1680693504	<p>This motherboard supports up to 32 GB of RAM. Its features also include USB 2.0 and 3.0 ports to handle large media files and external hard drives, as well as connectors to support the components needed to perform multimedia and multitasking actions. Its specifications include 2400MHz Hyper Transport FSB, AMD 970 and 950 chipsets, 4x240 memory slots, DDR3 800 / 1066 / 1333 / 1600 / 1866 / 2133* (OC) memory standard, dual channel support, multiple PCI and PCI express slots, 6xSATA 6Gb/s, Max LAN speed of 10/100/1000Mbps, 6 USB 2.0, 2 USB 3.0, and 6 audio ports.</p> <p>This CPU operates at 3.2GHz, a sufficient operating rate to act as the “brain” for this computer to process instructions based on our needs. It has a high clock speed to reduce latency and offers 4-6 MB of L3 cache. It also comes with Heatsink and a fan (see CPU cooler below). Its specifications are Series Phenom II X4, Socket AM3, Quad-Core, 4000MHz Hyper Transports, L2 Cache 4 x 512KB, L3 Cache 6MB, 64 bit support, and 125W thermal design power.</p>	 
Motherboard and CPU bundle, continued from previous page				
Memory	52.99 (32.99 after rebate)	http://www.newegg.com/Product/Product.aspx?Item=N82E16820220557	For heavy Internet use, running Windows 7, and participating in video conferencing and distance learning, 4-8 GBs of RAM are generally recommended. I have included 8 GB (2 x 4GB) RAM here, and note that the proposed motherboard can be upgraded to 32GB as needed. Its specifications are listed (<i>see URL link</i>) as “Patriot Gamer 2 Series 8GB (2 x 4GB) 240-Pin DDR3 SDRAM DDR3 1333 (PC3 10666) Desktop Memory Model PGD38G1333ELK.”	
CPU Cooler	n/a	http://www.newegg.com/Product/ProductList.aspx?Submit=ENE&DEPA=0&Order=B	Heat can damage PC components, particularly the CPU. The CPU purchased in the motherboard bundle described above, comes with a CPU cooler. However, should the need arise to purchase a CPU cooler, they are available in the price range of \$10-20. An example is included in this proposal.	

[ESTMATCH
&Description
=CPU+coole
r&x=0&y=0](#)

*cables and connectors are included with purchase

Hard drive 59.99 (on sale)

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16822152185>

As the storage for the computer's data, with 1TB and 32MB cache, this drive is powerful enough to store large media files, such as presentations, tutorials, and other large media files. Its specifications are Samsung Spinpoint 3, SATA 3.0Gb/s interface, 7200 RPM, 32 MB cache, average latency 4.17ms.



*cables and connectors are included with purchase

Optical Drive (cd/dvd)

54.99

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16827140052>

This drive includes CD/DVD viewing and burning, enabling media access and production through CDs and DVDs. This will allow students to view video tutorials, CD ROM data, and create data discs containing large files. Its specifications are HP DVD burner, DVD and CD ROM Access of 130ms, 6x to 24x write speeds for DVDs and CDs, 48x-16x read speeds for CD and DVD, LightScribe support, USB 2.0 interface, includes Nero Software Suite.



*cables and connectors are included with purchase

Graphics card

29.99 (on sale)

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16814102922>

Graphics cards generate output images for display. This graphics card is 64 bit and is capable of supporting streaming media, such as Netflix and state-of-the-art video games. Therefore, it will support large media files. It requires 400W power supply, which will be easily provided by the above described 550W power supply unit. Its specifications are PCI Express 2.1 x 16 interface, 650MHz core clock, 80 stream processing units, 1334 MHz memory clock, 512 MB memory size, 64 bit memory interface, DDR3 memory type, 1 each of HDMI, DSUB, and DVI ports, HDCP ready.



*cables and connectors are included with purchase

Tower case

19.99 (on sale)

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16811154095>

The tower case houses each of the components described above. This case is compatible with the designs of the above described components, has 2 external drive bays and 4 internal drive bays, as well as USB 2.0 ports on the front. The configuration of these bays and ports will make it easy to connect USB devices such as digital cameras or desktop scanners to this computer, as well as adding hard disc drives for additional storage. It measures 17.50" x 7.25" x 16.00". It is designed to be compatible with ATX motherboards. It is designed to improve system cooling.



Monitor

\$119.99 (on sale)

<http://www.ewegg.com/Product/Pro>

This 21.5 inch Hannspree widescreen LCD monitor has built-in speakers and 1080p resolution. The size and clarity are suitable

[duct.aspx?Item=N82E16824262011&cm_sp=Cat_Monitors-_-Hot_Deals--24-262-011](http://www.ewegg.com/Product/Product.aspx?Item=N82E16824262011&cm_sp=Cat_Monitors-_-Hot_Deals--24-262-011)

for video conferencing, long hours of word processing, and viewing a wide variety of media applications.



*cables and connectors are included with purchase

Keyboard and mouse combo 23.99 (on sale)

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16823126041>

This wireless keyboard and mouse combo eliminates the clutter of wires on the work surface, allowing for freedom of movement and more workspace. The keyboard and mouse interface with the PC through a wireless receiver that plugs into a USB port. The keyboard offers 24 months of battery power and the mouse has 5 months of battery power. The mouse uses an optical tracking method. The keyboard and mouse are compatible with all Windows based PCs.



*connectors/USB are included with purchase

Microphone 19.99

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16836111601>

This microphone will allow users to participate in video conferencing, as well as make recordings on this PC. The microphone connects via USB, pivots for comfort and is small enough to not consume much work space. Please note that the webcam comes with built-in dual speakers, which will be used when the webcam is in use. This microphone will be used for auxiliary purposes and is removable.



*cables/USB are included with purchase

Webcam 86.99

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16826104385>

This webcam will allow students to participate in video conferences and webinars. It interfaces through a USB port, as a 1080p resolution and HD 720p, with 10 megapixel snapshots. It also comes with face-recognition login, one-click upload to Facebook and free video editing software. This webcam features dual built in stereo microphones and is compatible with instant messaging programs for use in video chats and video conferencing. It also can perform in low lighting with built in RightLight technology.



*cables and connectors are included with purchase

Windows 7 Pro 139.99

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16832116992>

Windows 7 Professional is the proposed operating system for this PC unit. Because the school runs older versions of Windows on its PCs, utilizing an updated version of the Windows operating system for this unit will improve speed and add features useful in multitasking in a multimedia environment. It includes Windows Live which supports state-of-the-art video and media streaming and interaction. Its specifications are Windows 7 Professional SP1 64 bit. It requires 1GHz or



faster 32 bit, 1 GB RAM (32 bit) or 2 GB RAM.

Microsoft Office

124.99
(on sale)

<http://www.ewegg.com/Product/Product.aspx?Item=N82E16832116856>

This software includes Word, Power Point, and Excel and other familiar and updated Office features for word processing and presentations. Its specifications include 512 MB of recommended RAM and 3GB of disc space.

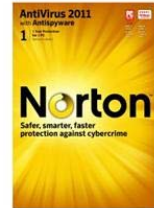


Norton Antivirus

29.99

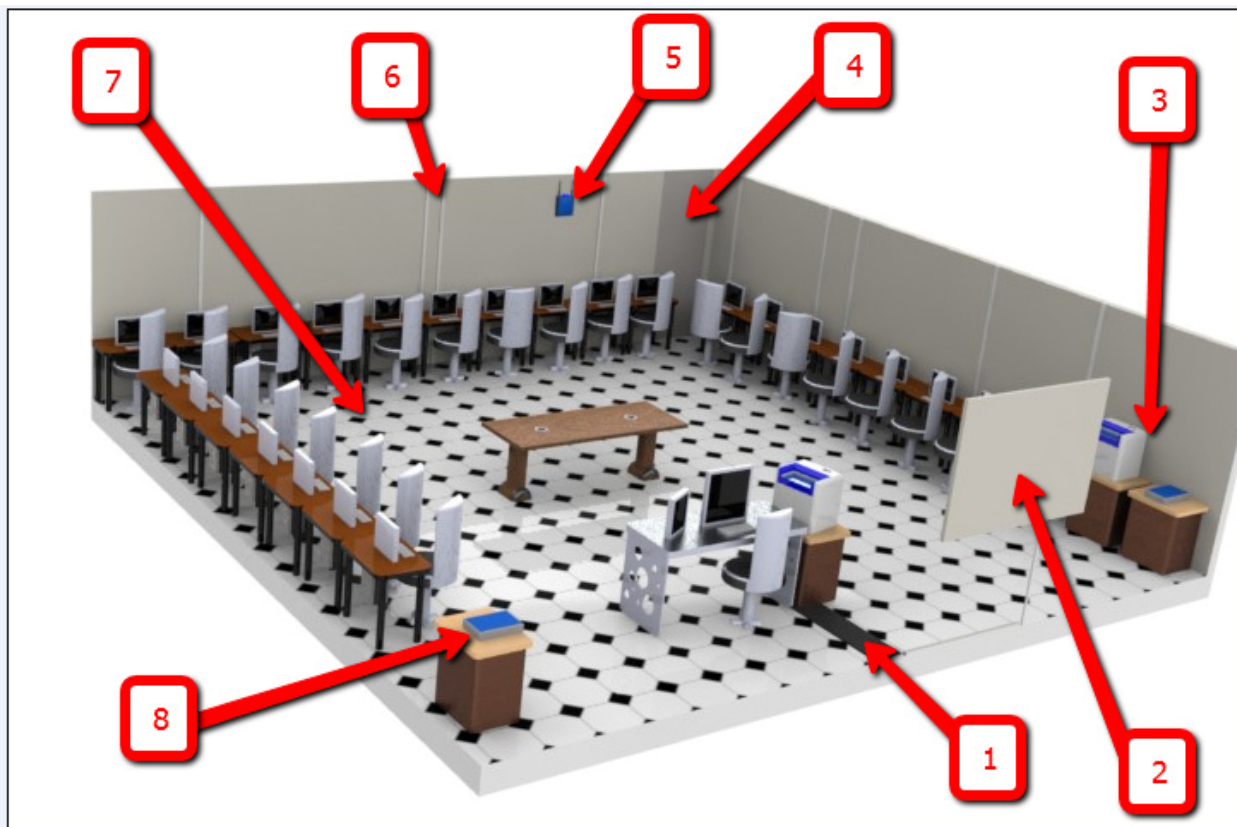
<http://www.ewegg.com/Product/Product.aspx?Item=N82E16832108590>

This software will protect the PC from viruses, spyware, and some aspects of identity theft. It has many PC protection features such as letting the student/user know when a website is untrustworthy and how certain applications affect the performance of the PC. It requires 256 MB of RAM and 300 MB of disc space, as well as an optical drive for installation.



TOTAL COST PER PC UNIT: \$983.85

LAB LAYOUT AND DESIGN



1. Cable floor cover by teacher's desk covering the cables running from the wall, down the floor, to the teacher's desk (actual product will be yellow)
2. Smart Board projector is ceiling mounted
3. Student printer and Scanner One

4. Access panel to server closet, wall mounted server storage inside
5. Wireless router
6. Cable covers on walls (raceways).
7. Open layout design for students with special mobility needs
8. Student Scanner Two

This lab design also features armless chairs for streamlined movement (actual product will be black), additional storage in the four printer and scanner stands, and a center conference room table for group work and additional surface space for “hands-on” learning such as hardware care and maintenance.

The overall lab design is intended to meet the needs of students, including those with disabilities. It is intended to be secure, with much of the hardware cabling and connections facing the wall to protect the hardware from heavy traffic and protect students from trip and fall injuries. It is also intended to be versatile. The teacher has the freedom to move about the room with or without his/her lap top. Lessons can be performed at the conference table for close, one-on-one learning, through the individual workstations for self-study, or through demonstrations via the Smartboard. Students should be able to move around in this interactive learning environment with minimal risks to themselves or the equipment.

JUSTIFICATION FOR SELECTED LAB EQUIPMENT

The above described materials and equipment were selected based on the design group’s belief that these products provide a combination of cost effectiveness, quality and versatility that will serve the students of Anycity High School. Please note that many of the materials were purchased in excess of the requirements for a lab serving 25 students. This excess is intended to provide the 9th Grade Computer Lab of Any City High School room to grow. As such, any materials not used in the building of this lab will remain the property of Any City High School to aid in the expansion of this lab.

Hardware

The student workstation was selected because it contains components such as expandable RAM (up to 32 GB), a powerful CPU, a 1TB hard drive, 64-bit graphics card able to support streaming media, a high resolution LCD monitor with built-in speakers, an HD webcam, Windows 7, Microsoft Office and Norton Antivirus. The components that comprise this workstation are suited to the performance of course work that calls for large amounts of multimedia interaction. Students will be able to participate in webinars, perform Internet research, and interact with the school’s learning management system with minimal latency issues and system freezes or crashes.

We selected a portable computer for the teacher’s model so that he/she may disconnect from the dock and have freedom of mobility to move the laptop around the room to work with the students at their stations or at the center conference room table. The Alienware laptop is traditionally a gaming laptop, meaning that it has powerful media-streaming capabilities to support highly detailed video games. In an academic setting however, this creates a powerful learning tool that can support graphic design software as well as multimedia streaming and interaction to bring more technology and creativity into the classroom. A docking station and additional monitor were also added to the teacher’s workstation to provide the teacher with the ports and connectivity of a desk top system, while still maintaining the freedom and flexibility of a laptop. The additional monitor allows the teacher to multitask during grading, test proctoring and lesson development and also allows the teacher to use Synchroneyes. The instructor can demonstrate lessons from his/her laptop while

monitoring the student's workstations from his/her additional monitor via Synchroneyes lab monitoring software.

The motivation behind the server and UPS selection was power. Students can be very demanding of their machines and active technology learning requires mass amounts of data transfer. The server was selected to have enough muscle to support all of the lab activities without latency and the UPS was selected to ensure work would not be interrupted or lost due to power interruptions. Likewise, a Cisco 48 port switch was selected for networking power and speed, and 48 ports provides this lab with room for expansion.

The lab design comes equipped with one networked printer and one networked scanner for student use and one networked printer and one networked scanner for the teacher's use. The printers are able to print 40 pages per minute and support manual feed paper and envelopes for a variety of printing needs. The scanners are desktop, page feed scanners with 600dpi. They scan in color and automatically scan two sided, so that students may convert their hardcopy work into PDF files for easy storage and emailing.

The lab design also comes equipped with a ceiling mounted smarboard for interactive lessons and quizzes, as well as teacher demonstrations.

Cables and Connectivity

In order to save Anycity High School money on the production of this lab, high quality Cat6 cable was purchased in 1000ft bulk, along with tools to create network cables. This way, cables may be custom made for this lab to reduce cable clutter and material waste from cutting unneeded pre-made cables to the correct length. Six-port keystone faceplates were chosen to provide room for growth. The design team will leave any unused materials with Any City High School, so in the event that any expansions or repairs need to be made, some materials will already be onsite.

Raceways were also purchased in 50ft bulk spools to create custom raceways for this lab. Again, being able to cut the exact measurement needed from bulk material reduces waste and saves the school money.

This lab design also features green surge protectors. Items plugged into the green spaces on the surge protector will also shut down when the computer is shut down into stand-by mode. Therefore, any workstation with additional equipment, such as speakers, microphones, printers, or scanners will save reduce the energy consumption of those items when the station is shut down at no additional effort of the user.

Software

The Anycity School District utilizes Windows and Microsoft products in its offices and other computer labs. Therefore, this lab design also features Windows products to be consistent with the school district. As stated in the workstation specification, each workstation comes equipped with Windows 7 operating system and Microsoft Office. Students will be able to take advantage of the Microsoft tools to write reports, create tables, spreadsheets, and calendars, and prepare PowerPoint presentations.

Adobe Suites will allow the students to explore webpage development through Dreamweaver; work with video files in Flash; manage and edit PDF documents; and manage and edit images in Photoshop. These software packages will provide students with word processing and multimedia experience valuable to their academic careers.

Continuing with the use of Windows products, the lab server will run the Windows Server 2008 operating system. The system supports web-based applications, has improved file-transfer services, as well as easy to access customer service and trouble-shooting features.

To protect the workstations, each computer comes equipped with Norton Antivirus which protects computers not only from viruses, but also from spyware, malware, and some aspects of identity theft. Furthermore, the lab shall be equipped with Synchron-Eyes classroom management software. This software allows the instructor a view of every workstation in the lab. This will enable the instructor to aid students in their work by being able to see their progress, and will also enable the instructor to stop students from accessing inappropriate materials through the Internet. In addition to Synchron-Eyes, this lab features Deep Freeze which will enable the instructor to return workstations to their preferred settings and configurations should a student accidentally download harmful material or inadvertently alter the station's software or network settings.

Furniture

This lab design features furniture that offers streamlined ease of movement, durability, and cost effectiveness. The student workstation chairs are armless to prevent book bag or purse straps from snagging on the furniture and causing accidents. This also reduces the overall profile of the chair so that students may move in close to each other for group work or presentations, without bulky chairs colliding. These chairs are lightweight and may be easily moved by students with special mobility needs. The instructor's chair follows the same design principal, but includes better material and larger construction to pamper our hard working teacher.

Both the student workstation desks and the instructor's desk follow the theme of streamlined design to add to the ease of movement in the environment without having to dance around bulky furniture. The tables are made from sturdy, yet lightweight material, so that they may be easily moved by one or two people for equipment cleaning and maintenance.

The conference table comfortably seats 16 adults, so students will be able to roll their chairs or stand around the table for "hands on" work and demonstrations. The table also provides an excellent work surface for the assembly of large projects such as group presentations. The conference table also has a center port for wiring to eliminate cords running across the work space.

The printer and scanner stands are durable, lightweight and equipped with wheels should they need to be moved. They also provide additional shelf storage for paper and other supplies for the lab.

Conclusion

This lab design was created to provide students with an environment that enables intensive technology work, self-study work, group work, and a forum to watch demonstrations and lectures. It is intended to be accessible to students with special needs and designed with the safety of students as well as the equipment in mind. Its design includes easy access for maintenance, as well as room for growth. We believe this lab will serve the students of Anycity High School well for years to come.