



Netbooks: A proposed alternative one-one program for grades 9-12

Hardware and software

- 1. Netbook configuration and performance**
- 2. Software image**
- 3. Web-based applications summarized**

I. Hardware

What are the hardware specifications of the netbook?

- Latitude 2100
- Intel Atom N270(1.60GHz,533Mhz FSB,512K cach e)
- 1.0GB int memory
- Intel Graphics Media Accelerator 950, Latitude 2100 (320-0766)
- 80GB Hard Drive 9.5MM, 5400RPMfor Latitude 2100 (341-0024)
- 10.1 inch WSVGA bezel w/ Integrated Camera and Mic, Latitude2100 (320-0779)
- 10.1inch WSVGA LED Display, Latitude 2100 (320-0784)
- 10.1inch WSVGA LED Display, Latitude 2100 (320-0790)
- 65W 3-pin AC Adapter for Latitude 2100 (330-4310)
- US - 3-FT/Flat Power Cord 3-Pin, for Latitude 2100 (330-4352)
- Dell WLAN 1510 (802.11a/b/g/n 2X3) 1/2 MiniCard for Latitude2100 (430-0607)
- 6-Cell/54-WHr Battery for Latitude 2100 (312-0133)

In practical terms, how is this different from a full sized laptop or desktop computer?

Besides the smaller screen, this device has a less powerful processor. Certain applications (Large graphics and video) will be slower. They'll work, but less optimally than on a full sized laptop or PC. This could be viewed as a limitation, but it could also be viewed as a push toward the newer paradigm of web-based applications.

II. Software

A. What software will be installed on the netbooks?

An ample selection of software is now available without charge from the open source community. While the netbook image will experience changes and additions, the following is a sample of installed applications:

- Open Office (Productivity similar to MS Office.) This includes Spreadsheet, Word Processing, Database, Presentation and Drawing applications.
- GIMP, GIMPPhoto, (Graphics application with similar features to Photoshop, (including layers, etc.)
- Picasa (Photo editing, slide shows, etc.)
- Audacity (Sound recording and editing)
- GeoGebra (mathematics package: arithmetic, geometry, algebra and calculus.
- PHUN (Physics Simulation)

- [Google Earth](#) (Mapping, Astronomy)
- [Stellarium](#) (Astronomy)
- [Scratch](#) (Programming language)
- [Google Sketchup](#) (Computer Aided Design)
- [DIA](#) (Diagram generator)
- [Blender](#) (3D content creation)
- [InkScape](#) (Vector graphics creator)
- [QuickMediaConverter](#) (Convert media files)
- [Wink](#) (Video/photo capture tutorial creator)
- [Freemind](#) (brainstorming application similar to “Inspiration”)
- [HomeBank](#) (Personal Accounting)
- UltraVNC (remote access, similar to ARD)
- CutePDF, Tiny PDF (create PDFs)
- FireFox (Web Browser, similar to MS Explorer)

B. What web-based resources will be used for instruction?

This netbook one-one program relies to a great extent on the change represented by web-based applications and resources. This is a new learning landscape, with thousands of resources, from software applications, to collaboration to content. Much of the world's commerce, politics, knowledge creation, etc. is now conducted in this environment. Perhaps the best example is GoogleDocs, where you can make a spreadsheet with ten people from around the world, and watch your partners' changes appear in real time. Google Applications are a part of MLTI training, as are a variety of web-based learning tools.

MLTI examples:

- Google Apps (Productivity, collaboration, etc.)
- ePals (Global collaborations, supervised email for students)
- ThinkQuest (Student collaborative projects)

Here at Portland Public Schools, several of our own learning resources and tools work in this way, including:

- Online classrooms (all high school teachers will be able to use these for their existing classes. The system includes quiz generators, forums, wikis, a variety of activities, all linked to courses.)
- WordPress (Teacher web pages, over 900 so far.)

John Cobleigh, a technology leader at Deering High School, gives a good description of how this works in the classroom:

>>> John Cobleigh 7/30/2009 1:02 PM >>>

I spent several hours working with the Netbook computers yesterday. Michael Lamoureux and I focused our attention on the PPS online classroom application. The machine I used worked very well for the purpose. I also spent some time navigating and editing my blog pages and again the machine worked effectively. As I think about how I used computers last year and the plans I have for them in the coming year, the netbook computers will meet all my needs. I feel this way because last year I relied on web-based resources for my classes and I can see a definite increase in my use of these resources in the coming year.

In physics, I plan to strengthen my blog presentations. I have spent time this summer modifying my existing presentations and converting them to the Adobe reader format PDF. Adobe reader is free and reliable software that takes little memory and can run on any computer. I have also had students use several virtual experiments on the web. The students appear to engage with them more earnestly than they do with conventional experiments. Perhaps they seem more like games than work. I've seen student understanding improve as a result. I have found a number of physics concept simulations that I will begin to use more extensively in light of this previous success. In addition, by using free software such as Screencast or Jing, students can record problem solutions for use as blog or online classroom posts.

In earth science, I plan to modify the structured reading exercises that worked so successfully last year. I will utilize the wiki function in the PPS online classroom. With the use of an LCD projector I can moderate and students can facilitate a real-time reading, internalizing, and demonstration of understanding that will be shared with everyone in the class. This real-time sharing will in turn increase and deepen the understanding of the material for everyone involved.

I am looking forward to the Google conference in August at Mt. Ararat. I am sure the web-based applications available at Google will provide me with a number of additional options in my classroom. The ability of the netbooks to utilize these applications will benefit student learning.

I think the key to using the netbooks to their utmost advantage is to begin looking to the web as a teaching and learning resource. None of these web-based resources will require a specific brand of computer or type of operating system. These applications are run externally from the computer and require only an internet connection for use. My experience with these applications is that they encourage more of a collaborative environment than do computers that have applications loaded on individual hard-drives. I think students are familiar and comfortable with the open source collaborative nature of the web as well. Their use of applications such as Facebook, You Tube, and instant messaging are just a few examples.

I think these machines will work well. I think they will move us in a direction that we wish to go technologically. I look forward to assisting teachers and students as they use these machines in their teaching and learning. If I can be of any further assistance let me know.

John C.