

Computing @ Every Student



Plano Independent School District is supporting four projects involving Palm handheld computers in classrooms this year. These projects are being investigated to give evidence as to whether these devices can help deliver on the promise of 1:1 student-to-computer ratio. The questions raised, along with the answers found, will help determine our strategic direction concerning handheld devices for the next few years.

Our projects under investigation include:

A group of 1st grade children who use the Palms throughout the school day in a variety of curriculum areas such as reading and language arts, math, social studies, science, and as a personal organizer. The Palm is also an integral tool in school/home communication. The students use software such as **AvantGo** to track weather information as part of their unit on weather; **Math Tree House** to practice their math facts and **Docs to Go** to do story starters, word families and similar writing activities.

A group of 4th&5th grade children use software such as **MiniMusic** to explore the relationships of poetry and music and **Palm Reader** to take works of fiction with them throughout their day. In addition, this population comprises many financially-disadvantaged children who will have the opportunity to bring this exciting technology to their homes.

A group of 8th grade middle school students have been placed in the same academic team to utilize handheld technology in algebra, English, history and science. This is our most comprehensive study of the impact of this technology and also one of the Palm Pioneer in Education grant awardees. Software such as **ImagiMath**, **ImagiProbe**, **Palm Reader**, **Docs to Go**, **AvantGo** and others make the use of the Palms an immersive experience for the entire day of these students including home use.

A group of 11th&12th grade students are involved in the "Ultimate Management Tool" project. As members of a semester elective titled "Management", these students will explore how handheld computers can be used to organize and utilize the great amount of information they are personally responsible for each day. In addition to **Docs to Go**, the students are investigating other software applications to be used for managing finances, schedules, time and energy.



Support and Management

Before implementation of these classroom projects could begin, several issues had to be addressed. Teacher training, classroom configuration, guidelines for student use in the classroom as well as at home, saving documents, printing, and financial responsibilities were just some of the issues we needed to consider.

Teachers and principals received seven hours of basic training on the Palm, portable keyboard, and digital camera. Three follow-up sessions were held to plan and discuss classroom functionality and software needs to support the classroom curriculum. As a group we composed an addendum for our Acceptable Use Guidelines for Technology Resources, which covered the Palm Handheld Computers. Teachers held a parent open house to discuss how the Palms would be used in each curriculum area. Information was also discussed concerning insurance and the financial responsibility of the student. Our Palm Usage Agreement is attached at the end of this document.



The projects began and students were issued a Palm to use at school and home for a year. Cradles were also issued to students that wanted to sync their Palms at home. Saving and printing are done at school but students must save documents to a shared drive and transfer to their home directories if needed. Most assignments are started in class but finished at home.

Students are expected to follow the district's Acceptable Use Guidelines for Technology Resources in addition to the specific additions listed below for handheld devices.

- District personnel will not support handheld computer applications other than that provided or recommended by PISD.
- Personal use of the district handheld computers by students is encouraged; however, the primary purpose is educational. If there is not sufficient memory to run classroom applications, personal programs must be removed.



Palmtop: Computing @ Every Student

NECC Technology Conference 2002 Hirsch & Hewett

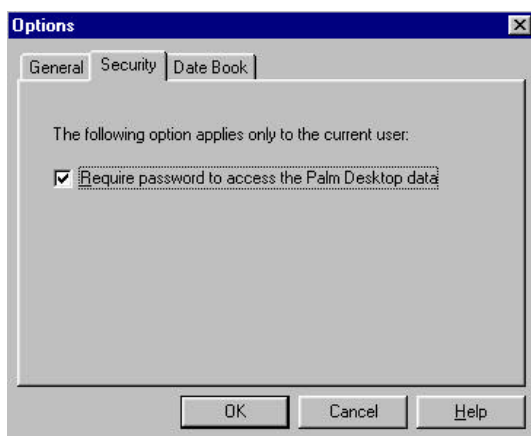
- Handheld computers may only be used in the classroom with the teacher's permission.
- It is the student's responsibility to have his/her handheld computer ready for class use (i.e., synchronizing, charging or replacing batteries).
- It is the financial responsibility of the student to pay for the loss of the handheld computer or any damage not covered under warranty.
- Any cost that the student accrues from purchasing personal software will not be reimbursed.
- All district handheld computers will be returned at the end of the school year.

Classroom Environment

The physical setup of the classroom does not need to change as you begin introducing the use of handheld computers with your students. However, it is helpful to have access to a Video Imaging Display camera (VID) and some way to display your handheld image to your class such as a large screen TV or video projector. The younger students can easily follow the teacher's instructions as they watch the teacher model the use of the handheld or a specific application via the collaborative display.

The first introduction of handhelds in the classroom may be a time for a more structured atmosphere. Students of all ages need to learn about the basics of beaming, syncing, and how to use the portable keyboards. Beaming and syncing become as natural to the students as xeroxing and saving class work. At any grade level, the keyboards are a must for classroom use.

Students are assigned a specific workstation to sync their palms. Each student is also given a cradle to set up their Palm at home. When using the Palm MemoPad, stu-



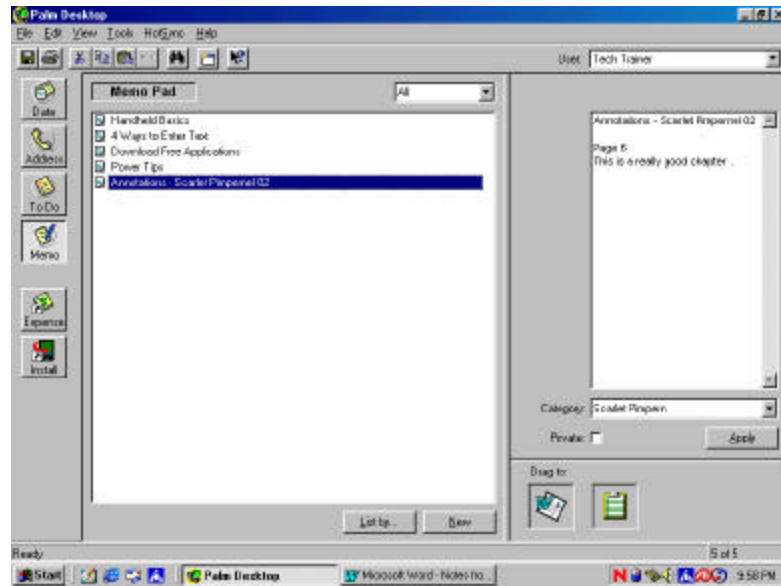
students are able to sync to their password protected Palm Desktop and then create a Microsoft Word document and save it to their home directory. In this environment, students must set their password on their handheld and also on their Palm Desktop. This provides a reasonably secure configuration to protect student work.



6

Notes

To create these Word documents, students simply drag their memo to the “Word” icon on their Palm Desktop and then save to their secure “home directory”.



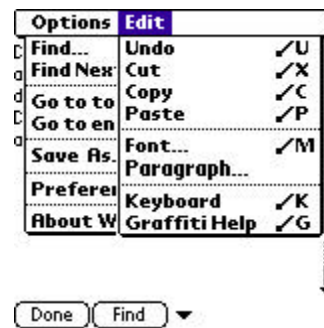
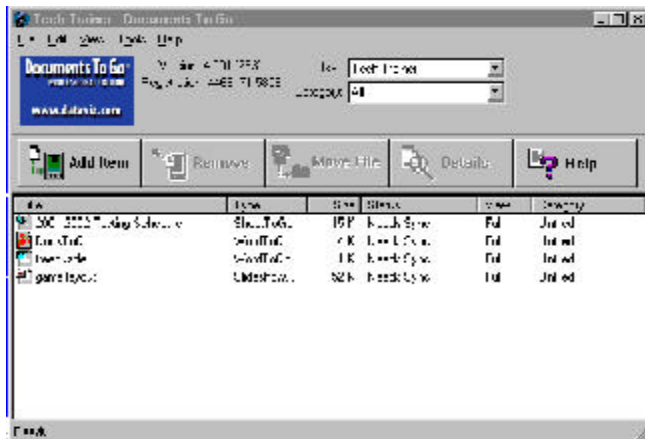
Even though most of our students have mastered Graffiti, there is a need for students to be able type with speed and accuracy as if they were sitting at a desktop computer. The students use keyboards for composing memos, documents, and reports as well as taking notes and tests. We have provided each student in the projects a full-sized keyboard that folds up to be just slightly bigger than the Palm. The product is sold as the “Palm Portable Keyboard” from Palm Computing. After installing the Portable Keyboard software, students set their Palm in the cradle and start typing. The keyboard uses minimal power from the Palm and no additional batteries are required. There are up to nine user-programmable keys used to access the applications and programs used most.



Classroom Applications

This section contains an overview of the various Palm-based software applications that students and staff are using initially in the projects.

Students have found **Documents to Go Professional Edition** (version 4.0) to be one of the most useful tools in the classroom. This application allows for transferring of Microsoft Word and Excel documents, PowerPoint Slideshows and PDF files to your Palm handheld via the **Docs to Go** desktop.



As students begin working on an assignment on their classroom computer and want to complete it at home, they are able to add the assignment to the **Docs to Go** desktop and sync it to their handheld. The document will hold its formatting but will not export the graphics. The word **[Image]** shows up as a placeholder for the original image. Many of the same editing options offered in Microsoft Word are available in **Docs to Go** (see options above right).

Any editing that is done on the student's handheld document will then be updated on the original document when syncing back to the classroom workstation. If the student does not want editing changes made to an original document, **Docs to Go** allows for a "save as" option. During the next synchronization, the edited document will be created on the classroom workstation while leaving the original document untouched.



PalmPix Digital Camera

The **PalmPix** camera from Kodak fits on the end of the Palm. The **PalmPix** program in the application launcher opens the software required to take pictures. The screen has three icons on the left: a clock, for the ten second self-timer, and icons for your choice of resolution—the one on the left with fewer dots is for 320 x 240 resolution; and the one on the right with more dots is for 640 x 480. The number on the far right is the number of pictures that you can store on your Palm. No matter the actual size of the image, 100 KB of memory is allocated to it. Pictures may range in size from 32 KB to a maximum of 126 KB, with about 85 being the average size.



To take a picture, just click the Date Book button. The screen is in grayscale whether the Palm is color or black and white. You can press the “Up” scroll button to activate the **PalmPix** 2x digital zoom. Press the Date Book button again to take the picture. The Palm then begins the process of saving the picture to memory. It takes about two seconds for low-resolution shots and 5 seconds for high resolution. The picture on the **PalmPix** shows up on the screen as a numbered file. Just tap on the number to view the image (in color if you have a color Palm). All pictures are in color, so even if you have a grayscale Palm you will see them in color on your PC. You are able to tap “details” at this point to name the photo, to mark it private, file it in a category, or delete it. All the pictures are copied to your computer when a HotSync is done. By default the **PalmPix** conduit stores them in a **PalmPix** folder in your Palm\username directory, though you can change that if you wish. You can also choose whether your files are saved as *.jpg or *.bmp, depending on your preference.

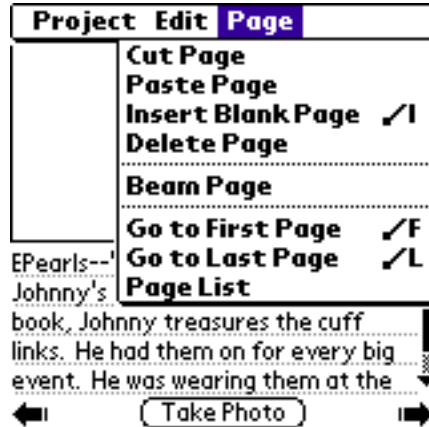
Go N Tell is a software application used in conjunction with the **PalmPix** camera to compile a scrapbook of documented photos and text. Students first give their scrapbook/project a name and then take pictures and enter text about the photo.





Each picture has its own page with a section to write text. Scrapbooks may be beamed page by page; photo only, text only, or the entire project can be beamed at one time. The students' scrapbooks are saved on their handheld and can be edited at any time. They may also save to any desktop computer by syncing. When synchronization takes place, a scrapbook directory is created and individual pictures are saved as .jpg images. In addition to having individual images, an html file is created including all images and text. What an

easy way to share activities over the web! Students may now publish their research, field trip events, and other class projects right to the web with this function of **Go N Tell**.



A list of scrapbooks with the date each was created is saved on the handheld, always with the option to edit or share.



Lectora Publisher for Palm OS

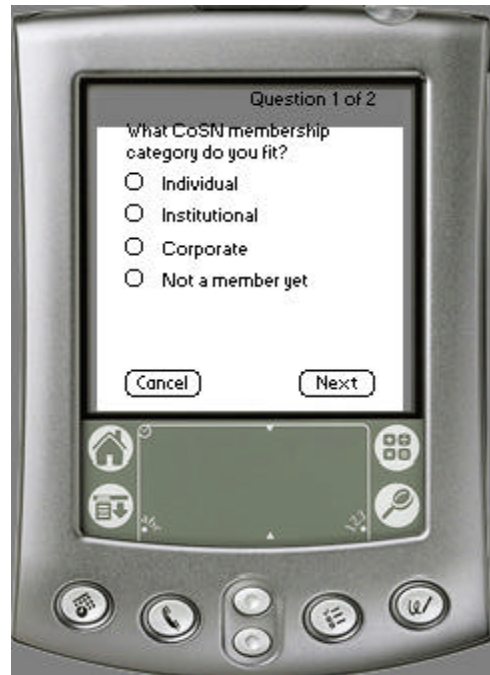
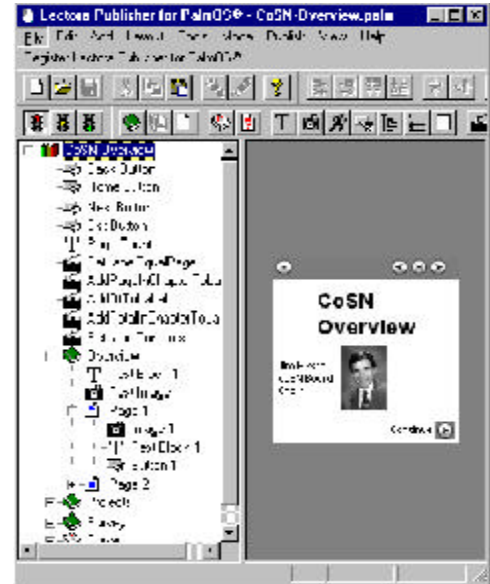
You can be certain that a hardware component has come into acceptance when software applications become available that enable typical users to author their own programs. Such is the case now with the Palm platform with the release of **Lectora Publisher** for Palm OS from the Trivantis Corporation.

With an easy-to-use interface and the ability to import a wide variety of file types (such as images, animations and documents) in addition to full support of copy and paste from other applications, Lectora Publisher brings the concept of authoring Palm applications to all users with even minimum PC experience.

If that were not enough, the program also supports the creation of interactive “buttons” and graphic-based text in any font and size. Actions can be assigned to occur automatically (such as when an image is shown) or triggered by a “stylus tap”.

For those times when an assessment or survey is needed, **Lectora Publisher** enables you to create those in an efficient and interactive manner. Question types include True/False, Multiple choice, Short answer, Essay, Fill in the blank, matching and Drag/drop. The questions can be self-checking for immediate feedback and can be configured so that an email is sent with the quiz contents as soon as the Palm is next synchronized.

Authoring programs have allowed teachers and students to personalize their learning activities for many years on the PC - the same is now true for Palm handheld computers with the use of **Lectora Publisher**.



Palm Gradebook Assistant

<http://gradebook.com/palmgbassist.htm>

Palm Gradebook Assistant allows users of Excelsior Gradebook2 for Windows and Macintosh to edit and maintain subsets of student assignment and attendance information using their Palm OS based PDA. There are four main functions to PGBAssist:

- Create New Assignments
- Edit Existing Assignments
- Edit Grades
- Take Attendance

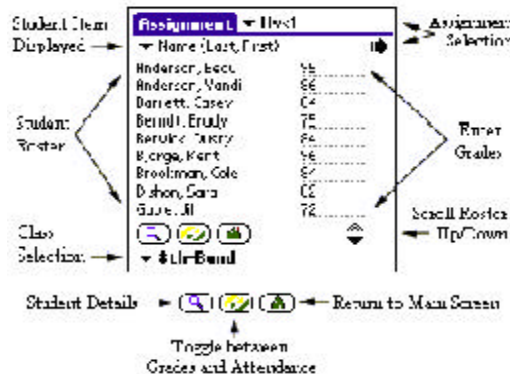


The Palm Gradebook Assistant communicates with Gradebook2 through an XML based text file. Gradebook2 creates this file when you use the “Check Out to Handheld” option under the Utility menu and select the classes you would like to check out. After the class files have been checked out, close Gradebook2 and perform a HotSync for PGBAssist to retrieve the data.

After making changes to the class file on the Palm, another HotSync is required to transfer the data back to the desktop. Once Gradebook2 completes checking in class files, the changes made on the Palm will be saved to the Pinnacle database and appear in the class files.

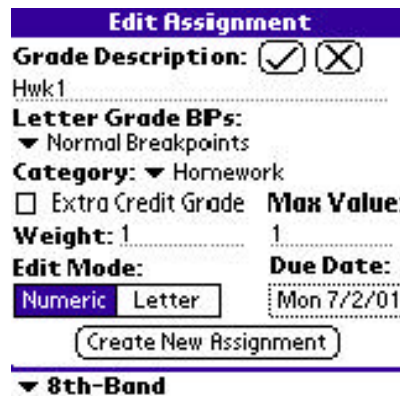
All Grade and Assignment data is entered through the Assignment Form.

All scores can be edited using the Graffiti pad or keyboard on your Palm device.

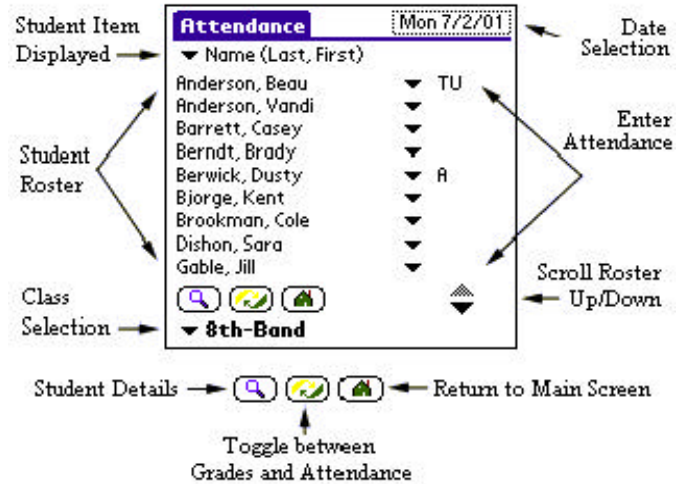


Assignment information can be added or edited from PGBAssist.

All changes and additions will automatically be added to the gradebook2 class file the next time HotSync is performed with the desktop.



Entering Attendance is similar to entering Letter Grades. Tap the popup to the right of each student to bring up an attendance code selection list. This list will have all the attendance codes defined within Gradebook2.



Palm Schedule Viewer

<http://gradebook.com/palmsview.htm>

This product will allow users of Pinnacle to view demographic and schedule information for an entire school worth of students.

The Palm Schedule Viewer communicates with Pinnacle through the Administrative Server. In order to save processing time, PSView will request a new set of files only once per day. This typically corresponds to an import of schedules on a daily basis. If schedules are imported less frequently into the Pinnacle System, then a HotSync to PSView will result in no changes.

Student Demographics	Student Schedule List
Student I.D. 901 Name (Last, First) Berndt, Brady Phone Number 353-2004 Grade Level 9 Gender M	4 / 16 / Smith, Wendy / Integrated 2 / 22 / Panasuk, Merna / English II 6 / 22 / Panasuk, Merna / Journalis 1 / 20 / Ludwick, Tom / World Studi 7 / 14 / Berndt, Gene / PE & Health 3 / 17 / Tischmak, Paula / Biology 8 / 29 / Garmon, Jill / Band 5 / 32 / Newhouse, Ann / VoAg 10 Schedule Description Order: Perio / Room / Teach / Descr
Close Student View	View Schedule Details Return to Student Selection

Student demographic information or student schedules may be viewed from the Main Screen. Select a student you wish to view and click the Demographics or Schedule button.

Since there is a limited amount of data that can be displayed in the Student Schedule List, the button View Schedule Details will give a detailed view of the specific class selected.



Plano I.S.D.

Palm Usage Agreement

Student Name _____ Date _____

Parent/Guardian Name _____ School Year _____

Address _____

City _____ Zip _____ Home Phone _____

PISD Item: _____ Serial No. _____ Replacement Cost: _____

_____ Serial No. _____ Replacement Cost: _____

Condition When Issued _____

Teacher's Signature _____

The Plano Independent School District will provide Palm handheld computers for the school year.

Parents agree to return the Palm to the teacher at the end of the semester or academic year in the same condition it was issued to the student, less reasonable wear. Damage beyond normal wear or loss of the Palm while in the student's possession becomes the responsibility of the parents to pay for repairs or replacement.

If the Palm is to be taken home, parents may wish to cover this equipment on their homeowners insurance policy, if possible. An alternative insurance policy is also available at a nominal annual fee. Information can be found at <http://www.thesignal.com/>.

Please sign below to state that you have read and agree to the terms of this contract.

Parent Signature _____ Date _____

Student Signature _____ Date _____

