

[POWER in the Palm of Their Hands]

The power of handheld computing as a tool to transform teaching and learning

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[Itinerary]

- Overview of the research
- Capabilities of the handheld
- Visions of technology use
- Software to support the findings
- Students in action

[Research Overview]

[Palm Education Pioneers Program]

- Crawford and Vahey, 2002
- Surveys of 102 early adopters
- Results
 - 89%: effective instructional tool
 - 93%: positive impact on student learning
 - 45%: change in instructional practice

[Overcoming obstacles]

- Cost factor
- One-to-one ratio
- Motivational
- Convenience
- Simplicity



[Ways they were used]

- Instructional tool
- Organizational tool
- Real world tool
- Communication
- Collaboration



[Instructional tool]

- Make a timeline
- Access writing prompts and editing checklists
- Make a photo album
- Read historical primary source documents
- Record observations on a field trip
- Take and store digital photos for a project
- Make a concept map summarizing a chapter
- Listen to historic speeches
- Look up a word in a dictionary and/or thesaurus

[Organizational tool]

- Instantly access student information
- Organize your reading lists
- Take notes at a meeting or in a class
- Record and tabulate grades
- Track computer hardware and software inventories
- Access a database of curriculum standards
- Evaluate teacher performance and record observation notes
- Keep track of schedules, assignments, and grades

[Real world tool]

- Use software to convert measurements
- Conduct surveys and collect data
- Use probes to determine temperature, wind speed, soil moisture, etc.
- Consult ask-an-expert sites
- Post information to a Web page

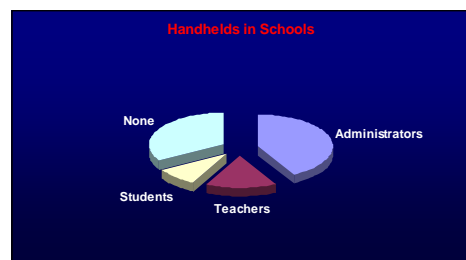
[Communication tool]

- Distribute school activity information to students
- Send assignment information home to parents
- Have students turn in an assignment electronically
- Get parents' sign-offs
- Transfer a file from your PC for instant access
- Send and receive instant messages
- Record voice notes

[Collaboration tool]

- Exchange information with a colleague
- Share a downloaded Web page with someone
- Write an e-book and share it with others
- Students peer-edit work
- Collaborate on a graphic organizer
- Have classes create their own mobile information channels (i.e. Avantgo)

[Current Stats from QED]



Administrative Uses

Data management and tracking

- Grading
- Attendance
- Discipline
- Student information
- Student schedules
- Memos
- Curriculum and district documents



Hardware Information

Quick Overview

- Palm® OS and Windows PocketPC®
- Palm® OS devices
 - work equally as well with PCs and Macs
 - longer battery life
 - more applications available

Brands of Palm® OS devices

palmOne



Sony

Garmin



Alphasmart



Three little things...

- Expandability
- Color vs. monochrome
- Keyboard/thumb-board



Visions for Handheld Use

[Competing Visions]

- “A defined vision for the learning environment should logically precede the adoption of a new technology solution, including handheld computers used by teachers and/or students.”

Wesley A. Fryer

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wtvi.com/teks/03_04_articles/competing_visions.html>

[Questions to be asked]

- What does a quality learning environment look like?
- What does it sound like?
- How should technology be used to shape this environment?
- Should technology define the environment?
- Is technology a fundamental requirement for teaching and learning, or an optional add-on?

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wtvi.com/teks/03_04_articles/competing_visions.html>

[Vision 1: Assessment]

- Individual assessment enhanced
- Software tailored to grade level and curriculum
- Collected data also reported to administrators

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wtvi.com/teks/03_04_articles/competing_visions.html>

[Vision 2: Teacher-Directed]

- Formative assessments delivered
- Immediate feedback from students
- Assess more frequently
- Students are engaged physically and intellectually

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wtvi.com/teks/03_04_articles/competing_visions.html>

[Vision 3: Paperless Classroom]

- Less paper by using the handheld for
 - Attendance
 - Student information and schedule data
 - State test data on students
 - Teacher lesson plans
- Provides more information for parents
- Does not change the instructional process

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wtvi.com/teks/03_04_articles/competing_visions.html>

[Vision 4: Authentic Learning]

- All students have access to a device
 - Access information, take notes, e-mail exchanges, collaboration
- Learn best
 - Engaged with authentic content
 - Publishing for authentic audience
 - Have the tools necessary to do the job

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wtvi.com/teks/03_04_articles/competing_visions.html>

[Challenge question...]

- How can we use instructional technology to positively transform teaching and learning environments, to prepare students and teachers for the twenty-first century?

Fryer, Wesley A. (2003) *Competing visions of handheld computer use in the classroom*. Accessed 1 June 2004. <http://www.wvi.com/teks/03_04_articles/competing_visions.html>

[POWER in the palm of their hands]

- P**alm Skills Activities
- O**rganizational Activities
- W**eb Activities
- E**ducational Activities
- R**eference Activities

[Palm Skills Activities]

[Spelling Words Baton Race]

- Put words in Memo Pad
- Have them erase this list
- Divide the class into teams
- Student 1 opens & names memo
- Have student 1 write one word and beam it to student 2 who writes word 2 and beams it to student 3...
- Beam final list to teacher

[Making Emoticons :-)]

- Brainstorm a list of emoticons
- Divide the class into three groups
 - Memo Pad and Graffiti
 - Memo Pad and on-screen keyboard
 - Sketchy
- Beam to each other for identification

[Making Emoticons samples]



Organizational Activities

Homework Memos

- Open a new memo in Memo Pad
- Use the Date Due-Class as opening
 - i.e. 11/04/03 History
- Enter assignment data and DONE
- Enter all assignments
- Sort alphabetically

Homework Memos



Homework Categories

- Open Memo Pad and hit arrow
- Choose EDIT CATEGORIES
- Choose the NEW button
- Create organizational categories
- Open each memo and file it
- While category is open, tap the MENU and BEAM MEMO

Homework Categories



Emergency

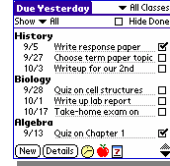
- Students gather emergency info
 - Poison Control Center
 - Parent's work number
 - Medical numbers
 - Neighbors
- Open the Address Book
- Add category: Emergency
- Add contacts and file in category

Emergency



You've Got Homework!

- Due Yesterday™
- Assignments and grades
 - Set up a class
 - Enter homework
 - Beam homework
 - Export to Date Book and To Do List



Web Activities

HTML and You

- Memo Pad or Freewrite™
- Create an HTML template
- Create different templates and beam



Web Access

- Palm OS 5
- Wireless and Internet capabilities



Wireless Access

Handheld with built-in 802.11b and AP



Handheld with Bluetooth and Bluetooth AP



Enfora Portfolio and AP



Portsmith Ethernet cradle



Web Access

- FlingIt!™
- Desktop and handheld app
- Captures sites and move them to the handheld



Nine Colors

- Web page color chooser
- Exports to memo
- Creates an HTML color chart



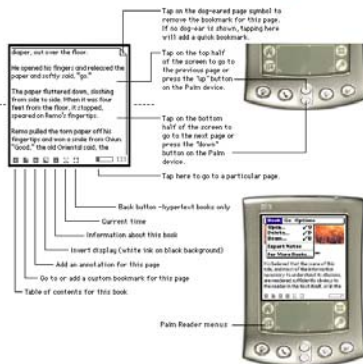
Educational Activities

BooksLog

- Databases of favorite books
- Books are rated and shared
- BooksLog™
 - Title
 - Author
 - Genre
 - Rate
 - Notes
- Logs are beamed to one another
- Booktalks and “selective beaming”



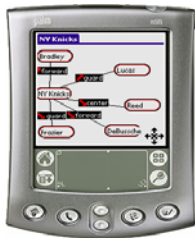
Palm™ Reader - Screen Navigation



Mapping

- Use concept maps to plan, organize, summarize, brainstorm and review information.
- Have students summarize parts of the chapter and beam their maps to each other to share their thoughts

Mapping samples



PicoMap



MindMapper

Mapping lesson by Betsy Campbell, Gr.1 Teacher



PicoMap

Mapping lesson Hirsch book



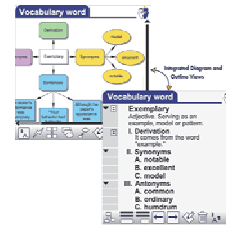
MemoPad



PicoMap

Inspiration for the Palm OS

- \$32 US (\$46 AUD)
- Full-featured
- Sync maps and templates
- "Killer app"



Beam My Book!

- Cooperative writing
- "Beam sync"
- All receivers get all updates
- "Experts share" jigsaw
 - Groups of students number off 1-4
 - All like numbered students get together
 - These groups learn specific content and bring it back to their own group

BeamBooks sample



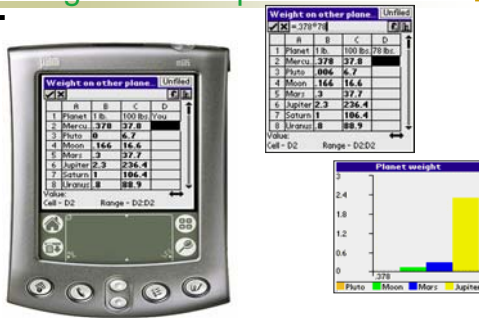
Cells for You

- Spreadsheets for data
 - Collection of "favorites"
 - Grades
 - Weather and science averages
- Spreadsheet for text
 - Rubrics
 - Bibliographic citations

Cells samples



Weight in other places



Match Who?

- MatchWho™ creates portraits
- Various features are selectable
- Activity
 - Create a portrait, name, and save
 - Share with partner
 - Write a descriptive paragraph
 - Share another for a longer time
 - Brainstorm methods used

Match Who samples



Funny Faces samples

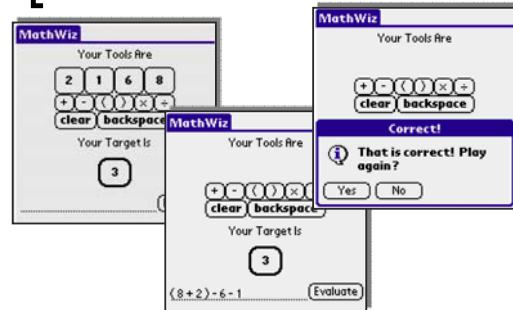


Order of Operations

■ MathWiz

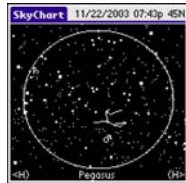
- Students presented with 4 random numbers between 1 and 10
- A 5th random number is given
- Students must use the math operations to produce the target answer

MathWiz



Hey, what's your sign?

- Determine astrological sign
- Include the common symbol
- Use SkyChart™ to locate "their" constellation
- Have "like sign" students research their sign's myth
- Math spreadsheet and graph



MoonPhase



Flash™ Stories

- Make animated stories using Macromedia Flash™ on the computer
- Using Kinoma Producer, convert the Flash movies to PDB files
- Using Kinoma Player, students can beam and share their movies
- Students write short stories to go along with all the movies.
- Create instructional movies.

Kinoma sample Flash movie



KWL

- **K** - Stands for helping students recall what they **KNOW** about the subject.
- **W** - Stands for helping students determine what they **WANT** to learn.
- **L** - Stands for helping students identify what they **LEARN** as they read.

KWL sample (iKWL)



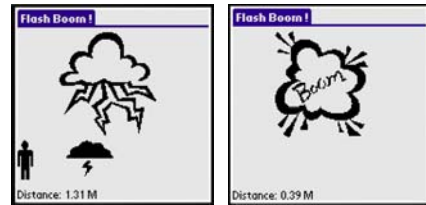
Tesselation

- Pattern creation
- Regular and irregular polygons



Flash Boom!

- Distance of storm determined by lightning and thunder timings



Flash Boom Lesson by Becki Casey

- Learn about lightning
- Complete the table
- Determine the mathematical rule

FlashBoom!

1. Complete the table below. Write the number of seconds between the flash and the sound for each lightning bolt in the 'In' column. Write the distance in miles for each lightning bolt in the 'Out' column.

In	Out
seconds between flash and sound	miles
10 sec.	2.33 mi

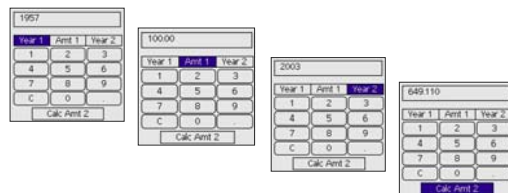
2. Analyze your In/Out Chart. Write a rule for the relationship of number of seconds between the flash and sound and the distance of the lightning.

Rule: _____

3. Why don't you see the flash and hear the boom at the same time? Write your answer on the back of this page.

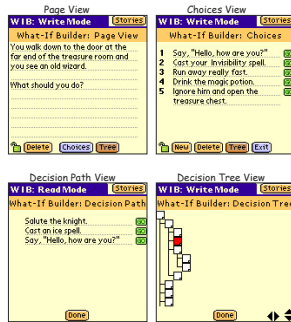
Inflation Master

- Calculates the effects of inflation
- Covers 1913-present



What-If Story Builder

- Enables students to create decision-tree models

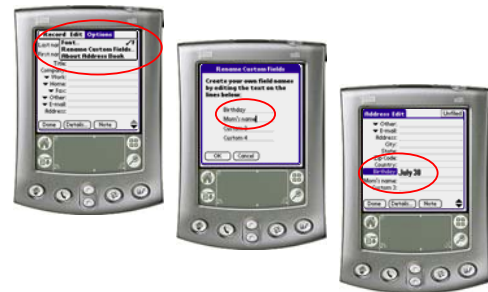


Reference Activities

Business Card Exchange

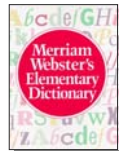
- Open Address Book and choose NEW
- Enter personal information
- Enter birthdate
 - Menu, Options, Rename Custom Fields
 - Add birthdate to field (mm/dd/yy)
- Beam business card
 - Menu, Select Business Card
 - Menu, Beam Business Card

Business Card Exchange

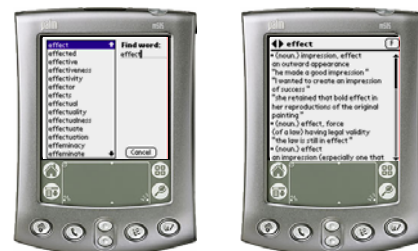


Handheld Dictionary

- NoahLite™ handheld dictionary
- Keep it close at hand
- Lesson plan about Noah Webster
 - http://www.education-world.com/a_lesson/lesson027.shtml



Handheld Dictionary

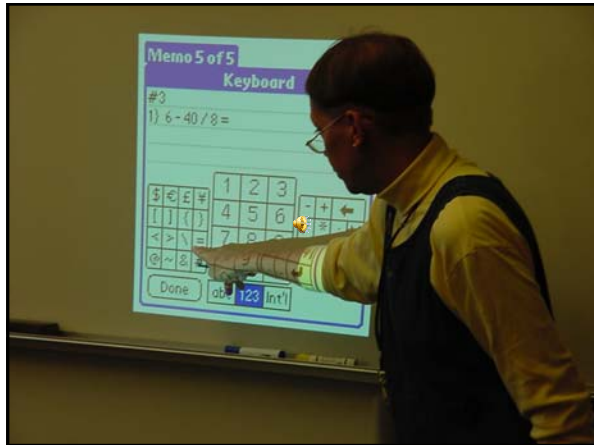


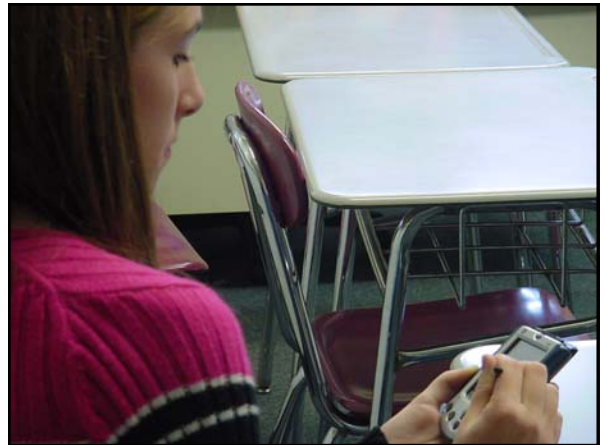
Lessons

- Math lesson-
Order of operations
- Art project
- ELA lesson-
Homophones



Pictures







[The End]

Online support page
<http://kathyschrock.net/power/>