“At-a-Glance Guides”

for

Electronic Portfolio Development

using common software tools

These one-page summaries provides a quick guide to the process.
A comprehensive handbook with more detailed instructions and videos is available on CD-ROM.

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Electronic Portfolios in Education

Here is Dr. Barrett's Electronic Portfolio Development Process:

1. Defining the Portfolio Context & Goals:

- Identify the **purpose** of the portfolio.
- Identify the learner outcomes, goals, or standards to be addressed in the portfolio.
- Knowing the primary **audience** for the portfolio will help decide the format and storage of the formal or presentation portfolio.
- Identify the **resources** available for electronic portfolio development. What hardware and software do you have? What technology skills do you have or want to develop?

2. The Working Portfolio – Archive Creation/Digital Conversion "Become a Digital Packrat!"
Collect the documents in electronic form and store in a single folder

- Set up an electronic filing system and set up a naming system for computer-created docs
- Set up electronic folders for each student
- Identify the most appropriate storage and presentation medium (i.e., computer hard disk, videotape, local-area network, a WWW server, CD-ROM, etc.).
- Digitize images using scanner or digital camera – **students or parents should do the work**

3. The Reflective Portfolio:

- Write a short reflection on each artifact (I liked [or selected] ___ because… I learned…)
- In an Assessment Portfolio, answer three questions for each outcome, goal or standard:
  1. "What?" (List the artifacts)
  2. "So what?" (Identify what was learned and how it leads to meeting the goal)
  3. "Now what?" (Set future learning goals)

4. The Connected Portfolio:

- Create hypertext links between goals, work samples, rubrics, and reflections.
- Insert appropriate multimedia artifacts.
- Create a Table of Contents to structure the portfolio;
  - use the outlining capabilities of either **Word** or **PowerPoint**,
  - or the graphical organizing AND outlining capabilities of **Inspiration**.

5. The Presentation Portfolio:

- Record the portfolio to an appropriate presentation and storage medium: CD-Recordable disc, WWW server, or video tape (soon DVD).
- Present the portfolio before an audience (real or virtual) and celebrate the accomplishments represented.
- Evaluate the portfolio's effectiveness in light of its purpose and the assessment context.

There are many common software tools that can be used to create standards-based Electronic Portfolios. A series of short guides have been developed covering Microsoft Word, Excel, and PowerPoint; Apple's OS X and PDF, Keynote, iMovie, iPhoto, and any Web page authoring program, such as Netscape Composer.

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Stage 1 Defining the Portfolio Goals

- Identify the **purpose** of the portfolio.
- Identify the learner outcomes, goals, or standards to be addressed in the portfolio.
- Knowing the primary **audience** for the portfolio will help decide the format and storage of the formal or presentation portfolio.
- Identify the **resources** available for electronic portfolio development. What hardware and software do you have? What technology skills do you have or want to develop?

Some Questions to Ask:

- What is the purpose of the portfolio?
  - ❑ Show growth over time
  - ❑ Document ongoing learning and professional development
  - ❑ Assessment – achievement of standards or goals
  - ❑ Employment (Marketing)
  - ❑ Other:_____

- What learner outcome goals will the portfolio demonstrate (or which national, state, or local standards and their associated evaluation rubrics or observable behaviors)?

- What hardware and software do you have and how often do you (or students) have access?

- What are the technology skills of the students and teachers?

- Who are the various audiences for the portfolio?
  - ❑ Student
  - ❑ Parent
  - ❑ College
  - ❑ Faculty
  - ❑ Potential employer

  The primary audience for the portfolio will contribute to the decisions made about the format and storage of the final or presentation portfolio. Choose a format that the audience will most likely have access to; i.e., parents may not have a home computer, but may have a VCR.

- What kind of technology does the primary audience have access to?

- What common software tools do you have that you can use to create the following type of electronic portfolio?

- Do you want to aggregate assessment data (for reports on student achievement of standards)?

- How much are you able to spend (or charge) **per** student **per** year on an e-portfolio system (in addition to currently-available hardware/software):

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Stage 2 The Working Portfolio

Archive Creation & Digital Conversion

Collect the documents in electronic form and store in a single folder

- Set up an electronic filing system and set up a naming system for computer-created docs
- Set up electronic folders for each student
- Identify the most appropriate storage and presentation medium (i.e., computer hard disk, videotape, local-area network, a WWW server, CD-ROM, etc.).
- Digitize images using scanner or digital camera – **students or parents should do the work**

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- Digitizing **Images** for your Electronic Portfolio using **Digital Still Cameras**
- Digitizing **Images** for your Electronic Portfolio using a **Scanner**
- Digitizing **Images** for your Electronic Portfolio from **35mm film** and **prints**
- Editing Digital Images using a **Graphics Program**
- Digitize **Sound** for your Electronic Portfolio
- Import **Music** into your Electronic Portfolio
- Digitize **Video** for your Electronic Portfolio **With a VCR or Camcorder**
- Digitize **Video** for your Electronic Portfolio **With a digital video camera**
- Store your Digital Artifacts

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Digitizing **Images** for your Electronic Portfolio using **Digital Still Cameras**

GENERIC INSTRUCTIONS FOR DIGITAL CAMERAS

Every make and model of digital camera has a distinctive way of taking pictures, storing them, and transferring those pictures to your computer. Here are a few of the most common instructions for using digital still image cameras.

- Most digital cameras use removable media to store the pictures. Some Sony models use the memory stick, and other companies use Smart Media Cards and another common media is the MultiMedia Card.
- Most digital cameras have an interface to connect the camera directly up with your computer either via Serial Bus, or USB (Universal Serial Bus).
- If the camera does not have an interface to connect to the computer, or it has an interface that is not compatible and has removable media then you must have a reader to access your pictures.
- There are many programs that allow you to view your pictures and/or download them to your computer, and most cameras come with appropriate software. You should read the manual that comes with the camera. Apple's **iPhoto** can be used to download photos from most digital cameras as well as Adobe photo software.

Megapixel / Resolution / Size

When using a digital camera, you will need to decide what quality picture you want. Most cameras allow you to change the resolution of the picture to a lower quality so that you can store more pictures on the camera media. Likewise you can increase the resolution for a better quality picture, but fewer photos can be stored.

Megapixel: The term megapixel means 1,000,000+ pixels. More pixels mean higher resolution, better quality, as well as a physically larger picture and a file that takes up a large amount of disk storage space. Older or cheaper cameras take pictures in 640 x 480 mode, which is 640 pixels wide and 480 pixels high (307,200 pixels or .3 megapixels). Computer screens normally display at 72 pixels per inch whereas most printers print at 300 dots per inch. A lower resolution means that you cannot print a nice looking 8"x10" photo with this camera, although the images look fine on a computer screen.

Resolution/Size: Resolution means the quality of the photo that you are taking. DPI, or Dots per Inch, means the number of dots per square inch on your photo; the higher the DPI the clearer the photo and larger the file size. Using low-resolution pictures on the Internet (or in an electronic portfolio) are fine with a DPI of 72-100, since the primary display medium is the computer screen. When storing images on a CD or diskette for personal use a DPI of 150-200 is more than adequate. There are many higher megapixel digital cameras. When taking pictures with these cameras, bring the images into a graphic editing program and reduce the resolution to 72-100 DPI before inserting the image into the portfolio. The most common graphic editing programs include Adobe PhotoShop Elements, Adobe PhotoDeluxe, Graphic Converter (shareware), and iPhoto.

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Digitizing **Images** for your Electronic Portfolio using a **Scanner**

Preparing to scan.

- If you are using a scanner on your computer, be sure you have installed the driver (software that tells the computer how to connect to the scanner).
- Make sure the scanner is plugged in to the computer (probably through USB port) and turned on (if needed).
- Open the top cover of the scanner and place the item you are scanning face down on the glass. Put the top left corner of your image in the designated corner for your scanner. Close the cover. If you are scanning a book or other object that does not lay flat, you will need to hold it steady while you are scanning.

Scanning the image.

- Launch the software that came with the scanner or use Photoshop, Photoshop Elements or Photo Deluxe
- **Prescan** your image.
- To prepare the image for the final scan – select the area you want to scan with the cross-hair cursor
- Select the **Scanner Settings**: image type, destination, resolution, and scale. (**See below**)
- Click the **Scan** Button. (In some cases, you will need to hold the document steady while you scan.) Your picture probably will open in a new window.
- **Save** the file. The format you choose depends on what you plan to do with the file.

  Photoshop--If you plan to manipulate the image before you use it.
  JPEG--Photographs, compressed, good for web (or on-screen) images with lots of color variation.
  GIF--Logos, good for web (or on-screen) images with large areas of flat color or line art. Also works on the web (only 256 colors in this Graphics Interchange Format)
  TIFF--A universal format that works on PCs and Macs. Does not work on the web.
  PICT—A Macintosh-only uncompressed format

Usual Scanner Settings

Image type: color photo, grayscale, line art (B&W). Tip: Use line art for scanning text or handwriting.

Destination: Will you print the image on a laser or ink-jet printer or will you use it on-screen for a web page or presentation? The destination affects the resolution.

Resolution: The higher the resolution, the larger the file size. Make your choice based on the output device you plan to use. Larger isn't always better. Here are some general guidelines.

- Computer Screen (also email and web): 72 dpi (dpi=Dots Per Inch)
- Ink jet printer: 150 dpi
- Laser printer: 300 dpi

Tip: When scanning a line art drawing (or handwriting) use a higher resolution. If you were scanning an image to use on screen, start with a resolution of 200 dpi then resample if necessary (change resolution to 72 dpi) in a graphics editor such as **Photoshop Elements** or **Graphic Converter**. This will give you a much sharper image.

Scale: Sometimes the dimensions of the item you are scanning are too big for your document. You can adjust the size by setting the scale.

Select the area you want to scan by adjusting the size and shape of the dotted lines. Use the + (crosshair cursor) or move the handles to select the part of the image to be scanned

For more detailed information about scanning, consult the following website: http://www.scantips.com

Some of this document was originally developed by Dr. Ann McCoy, University of Alaska Anchorage.

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Digitizing **Images** for your Electronic Portfolio from **35mm film** and **prints**

Many times, you may not have access to a digital still camera or to a scanner. No problem! You can take pictures with standard film cameras. Even those throw-away 35mm cameras will take good snapshot prints that you will be able to digitize for your portfolio. Many film developing services offer an option to receive a digitized version of your pictures. Have the film developed and check the option to receive a floppy diskette (or a CD), usually at an extra cost.

You can also scan individual paper prints with a scanner. For one or two images per roll, that is manageable. However, the task can become very time-consuming. For a large quantity of images, there are several options:

- **Kodak** offers the feature of creating a **Picture CD** with several different high quality versions of your pictures. http://www.Kodak.com

- There are several online photo developing services: **dotPhoto, Ofoto, Shutterfly,** and **SnapFish** are WWW-based services that offers film developing as well as digitizing your images. You receive prints of your images, and an online space on their server where digitized (but low-resolution) versions of your photos will be stored for a limited time. You can share them with friends and family, and order more prints. You can also reorganize your images on their website and order a CD-ROM with high quality versions of your pictures.

> To get started, just click on the link below and log in with your email address and password. They will send you a Snapfish Welcome Kit with free postage-paid film mailers, or you can print out a postage-paid mailing label and send your film in right away. http://www.snapfish.com/getMailerChoose
>
> From each roll of film you send to Snapfish, you'll get:
>
> - A full set of prints on Kodak paper, and your negatives
> - A free online photo album that's easy to share with friends and family (low resolution photos stay online for 90 days)
> - Online reprint ordering, either for regular prints, download individual high quality digital images, or order a CD-ROM with your selection of high quality digital images
>
> If you use a digital camera, you can also get 10 free 4x6 prints the first time you upload photos from your computer to your account. Just log in to your account and click on 'upload photos' on the home page to get started.
>
> For more info about how Snapfish works, please visit the link below: http://www.snapfish.com/howitworks
>
> *Portions of this section came from materials provided by Snapfish.com.*

Weblinks: http://www.ofoto.com http://www. shutterfly.com http://www.snapfish.com http://www.dotphoto.com

Scanning slides requires a special scanner to hold the slides or film strips. Some flat-bed scanners have an add-on or adapter that allows scanning slides. However, you can usually only scan one slide at a time, and the quality of the image is limited by the density of the scanner. A dedicated slide scanner usually scans slides at much higher density and automates the process; you might consider using one if you have a lot of slides to digitize.

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Editing Digital Images using a **Graphics Program**

There are a variety of graphics editors available that can be used to change your images: **Photoshop**, **Photoshop Elements**, **PhotoDeluxe** are all from Adobe; **Fireworks** and **Freehand** from Macromedia; **iPhoto** from Apple.

Graphic Converter is a shareware program that allows you to manipulate your images. The most common tasks will be performed using the **Picture Menu**, including **Size**, **Resolution** and **Rotate** your images. There is also a comprehensive users Manual in the folder with the software.

You can change the number of **colors** in your picture, to reduce the file size. On most computer monitors you cannot tell the difference between 16 Bit (thousands of colors) and 32 Bit (millions of colors) graphics. But the 16 Bit images are much smaller.

Most of these graphics programs let you convert your images (Save As…) in many file formats. Here are the most common graphic file types:

JPEG (stands for Joint Photographic Experts Group) is a compressed file that has become a standard for web-based images and digital cameras. These pictures can be millions of colors. This is the preferred format for saving pictures because they can be read by most programs and computers.

GIF (stands for Graphic Interchange Format) is also a standard file format for web pages, but limited to 256 colors.

PICT is the standard file format for the Macintosh

BMP (stands for Bit Mapped Picture) is the standard file format for Windows computers

EPS (stands for Encapsulated Post Script) – very large files used most often in desktop publishing

TIFF (stands for Tagged Image File Format) – also very large files used most often in desktop publishing

To find the latest copy of this software, try the following websites:

Macintosh: http://www.lemkesoft.com/

Windows: http://www.tucows.com/mmedia.html

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Digitize **Sound** for your Electronic Portfolio

Adding sound to your portfolio can add a richness and personality that is not possible with static images or text. Whether you are recording a narration for a slide show or a child's reading sample, digital audio artifacts take advantage of computer technology and allow non-linear access to your sounds (no more fast-forwarding or rewinding audio tapes to find an audio clip). What is required to convert sound into digital format? You will need a small amount of equipment and some audio digitizing software, some of which might be included in your computer's operating system.

Equipment: A microphone that can be connected to your computer. Some laptop computers come with a built-in microphone, which is not adequate for a good quality recording. Some laptops don't have a microphone port, so must use their USB port to input sound,

- **USB** microphones – There are microphones that connect directly to the USB port of the computer. The quality of these microphones can vary.
- **Griffin Technologies USB Audio adapter** will allow you to connect a standard mini-jack microphone to a computer without a microphone port. [http://www.griffintechnology.com/products/imic/index.html]
- **Microphone** – Radio Shack microphone Model 33-3026 can be connected directly to the Griffin adapter or directly to a computer with a microphone port and provides a good quality recording at a low cost.

Software: You will need software to be able to convert sound into a computer-readable format. Most video editing software can also be used to record audio tracks. Sound can be recorded directly into PowerPoint (**Insert Menu-> Music and Sounds-> Record Sound…**) Here are some computer programs available: (software may be downloaded from http://download.com.com/)

Macintosh OS X
Audacity – a freeware program
Sound Studio from Felt Tip Software

Windows
Sound Forge – very expensive but the standard!
Total Recorder – popular low cost alternative

Settings: For best quality, use the following settings
– (the higher the numbers, the better the sound quality, but the larger the file size)
Sample rate (the number of times a second that a sound is sampled -- kilohertz):
44,100 is CD-quality
Bits: 16 bit sound provides a more dynamic range describing each sample than 8 bit sound
Stereo gives two audio tracks (left and right); **Mono** gives a single audio track

Most Common Audio File Types:
AIFF – Audio Interchange File Format – Uncompressed Macintosh sound files
WAV – Windows Wave Format
MP3 – The compressed audio format very popular for storing music (see iTunes)
CDA – Audio tracks on a CD-ROM

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Import **Music** into your Electronic Portfolio

Adding music to your portfolio can add a richness and emotion that is not possible with static images or text. You can provide a sound track for a slide show. What is required to convert music into digital format? There are three major sources for digital music:

Importing Music …

From Compact Discs: The tracks on CD music discs can be converted into MP3 music files that are usually 1/10th the size of the original music track. MP3 conversion programs such as iTunes, can be used to convert individual tracks or entire CDs. Most of these programs can automatically download CD information and track names from an online database if your computer is connected to the Internet when you are converting the CD. Compact discs contain copyrighted music, and should only be used in compliance with current copyright laws. For multimedia projects that will be published on the Internet, use Royalty-Free music.

From the Internet: There are a variety of sources for MP3 music on the Internet. Now that Napster has been shut down, most of those sources require a fee to cover the copyright royalties. Here is a great website where you can download Royalty-Free music for use in multimedia projects: http://www.freeplaymusic.com. Apple has also included many of these audio clips in the download area of your iTools .Mac account.

Record live or from audio tape: Hook up your tape recorder speaker jack to the microphone jack of your computer, with Radio Shack cable #42-2152 (1/8" - 3.5mm stereo phone plug at each end) and use an audio digitizing program to record the sound.

Converting Sound Files with Apple QuickTime Player Pro: Some programs want a specific type of sound file. You can convert the file type with QuickTime Player Pro (Macintosh or Windows). Select **File Menu -> Import…** and open the audio file. Select **File Menu -> Export**, select the new file format, and click **Save**. Music can be exported into a sound-only QuickTime file, which can be played just like a movie, but remains a separate file, which must be included with the portfolio when published.

Playing music…

In your PowerPoint slide show: Select **Insert Menu -> Music and Sounds**. After selecting the sound file, you will indicate whether the sound will play automatically when the slide is shown, or you may click a sound icon to play it. The sound plays only while the slide is showing, and stops when you go to the next slide. Using the same menu, you may also select a track to play from a CD music disc (be sure it is in the computer's CD drive).

In your Keynote slide show: Select **Edit Menu -> Place -> Choose…** and select the file. The sound will play automatically when the slide appears, and stops when you go to the next slide.

In your Acrobat document: Two options: (the first is preferred for large files) 1. Use the Movie tool to insert a sound-only QuickTime movie, which must be included as a separate file; or 2. Use the Link tool to insert sound file into the Acrobat document. Use Page Actions to play the sound when the page opens.

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Digitize **Video** for your Electronic Portfolio

With a VCR or Camcorder

Analog Video through a video digitizer = Digital Video

Adding video to your portfolio provides a very rich opportunity to showcase your best work that you may have recorded with a standard analog video source, whether on a standard VHS tape or the newer 8mm tape.

Hardware

You need to be able to connect a VCR (or 8mm camcorder) through a video digitizer to your computer, usually using standard RCA cables. Some computers come with the video digitizer built in. Just connect the RCA cables from the "video out" on the VCR or camcorder to the "video in" on the computer and use the software that usually comes with those video digitizing boards. You can also add such a board to your computer. Two popular versions for the Windows platform are made by Dazzle and Pinnacle Systems.

Formac also makes a video digitizing box that connects to a FireWire (IEEE 1394) port on your computer (approx. $400 – http://www.formac.com). If you have a digital video camera, you can usually connect an analog video source into the camera using RCA cables that come with the camera.

Software

You need software to be able to convert the analog video into digital format. Most video digitizing boards come with their own software. Following is a list of the most popular software that works with analog video:

Macintosh OS X

Adobe Premiere – http://www.adobe.com
Final Cut Pro or XPress – http://www.apple.com
NOTE: iMovie ONLY works with a digital video stream either imported directly from a digital video camera, Formac digitizer, or a DV stream file.

Windows

Adobe Premiere - http://www.adobe.com
Dazzle – http://www.dazzle.com
Pinnacle Studio – http://www.pinnaclesys.com
Ulead VideoStudio – http://www.ulead.com

Helpful Websites:

http://www.microsoft.com/windowsxp/moviemaker/getstarted/cameratopc.asp

http://ali.apple.com/ali_sites/ali/exhibits/1000019/

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Digitize **Video** for your Electronic Portfolio

With a digital video camera

Adding video to your portfolio provides a very rich opportunity to showcase your best work that you may have recorded with a digital video camera.

Hardware

A digital video camera automatically records video into digital format and saves it on a miniDV or Digital8 tape. Most digital video cameras come with a FireWire (IEEE 1394) connection that allows you to connect the camera to the computer using a FireWire cable to transfer the video stream. Most cameras have a 4-pin FireWire connection, whereas most computers have a 6-pin FireWire connection, A few laptop computers only have 4-pin FireWire connections, Be sure that you have the correct cable for your computer and camera. Connect the camera to the computer and run the appropriate software.

To convert analog video into digital format using a digital video camera, connect the analog video source to the digital video camera using an analog RCA cable. Just connect the RCA cables from the "video out" on the VCR or camcorder to the A/V port on the camera. Some cameras will accept standard RCA cable input, Other cameras come with their own unique connector and supply the appropriate cable. Record the incoming video using the VCR functions on the digital video camera. The resulting video saved to the tape in the camera has been converted to digital video.

Software

You need software to be able to transfer the digital video into the computer. Most video digitizing boards come with their own software. Following is a list of the most popular software that works with digital video:

Macintosh OS X
Adobe Premiere – http://www.adobe.com
Final Cut Pro or XPress – http://www.apple.com
iMovie – http://www.apple.com

Windows
Adobe Premiere - http://www.adobe.com
Dazzle – http://www.dazzle.com
Pinnacle Studio – http://www.pinnaclesys.com
Ulead VideoStudio – http://www.ulead.com

Helpful Websites:

http://www.microsoft.com/windowsxp/moviemaker/getstarted/cameratopc.asp

http://ali.apple.com/ali_sites/ali/exhibits/1000019/

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Store your Digital Artifacts

An important part of building your digital archive is finding appropriate digital storage options. Here are some popular strategies for storing your digital artifacts.

WEB BASED STORAGE

There are a few web sites that give your free storage space on their servers that is accessible via the Internet (most free web storage was discontinued in 2001). The remaining free web based storage companies are listed at: http://www.freewebspace.net/guide/diskstorage.shtml. Yahoo Briefcase (http://yahoo.com) allows 30MB of file storage and can be configured to appear as a Y: Drive on a Windows computer. Apple Computer's iDisk service, which was free until September 2002, is now a subscription service called .Mac, providing 100 MB of online storage.

SERVER STORAGE ON LAN/WAN

The best storage is on a local area network that is also accessible from the Internet. Most universities provide a relatively small amount of space for students (5-10 MB). The space is usually no longer available once students graduate, although some alumni associations are encouraging "lifelong" storage for professional portfolios created by graduates,

HARD DRIVE STORAGE (e.g., Apple's iPod)

Some universities are loaning hard disk drives (either USB or IEEE 1394—FireWire) for students to use for digital video editing. A small portable disk drive may prove to be the most effective storage option, since most today cost in the low $100's for gigabytes of storage. This is an essential option for electronic portfolios with a lot of multimedia. Apple's iPod is both hard drive and MP3 player that can be used for e-portfolio storage.

REMOVABLE MEDIA STORAGE

An out-dated option for e-portfolio storage is the Zip or Jaz Disk Drives made by Iomega. The limitation with this strategy is reliability of the media, cost, and availability of drives,

CD-RECORDABLE (CD-R) AND CD-READ-WRITE (CD-RW) DISKS

CD-Recordable disks are a great medium for publishing the final e-portfolios, as well as for backing up student files. They are not efficient for day-to-day working storage.

USB STORAGE

A relatively new storage medium, sometimes called a "disk on key" or a "USB drive" uses Flash memory to store files on a very small device with a USB connection at one end. Plug the drive into the USB port of a computer and it appears just like any other disk on the computer's desktop. These drives usually come in sizes from 32 MB to 256 MB and up. While handy for working portfolios, make sure these data are also backed up elsewhere.

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Stage 3 The Reflective Portfolio & Stage 4 The Connected Portfolio

- Write a short reflection on each artifact (I liked [or selected] ___ because… I learned…)
- In an Assessment Portfolio, answer three questions for each outcome, goal or standard:
  1. "What?" (List the artifacts)
  2. "So what?" (Identify what was learned and how it leads to meeting the goal)
  3. "Now what?" (Set future learning goals)
- Create hypertext links between goals, work samples, rubrics, and reflections.
- Insert appropriate multimedia artifacts.
- Create a Table of Contents to structure the portfolio;
  - use the outlining capabilities of either **Word** or **PowerPoint**,
  - or the graphical organizing AND outlining capabilities of **Inspiration**.

Contents

- Create Electronic Portfolios using **Microsoft® Word**
- Cross-Reference Standards and Portfolio Artifacts using **Microsoft Excel**
- Present Electronic Portfolios using **PowerPoint** or **Keynote**
- Build Electronic Portfolios using Macintosh **OS X** and **PDF**
- Develop Electronic Portfolios using **Netscape Composer** *or your favorite Web Page Editor*
- Collect, organize and publish image-based e-portfolios using Apple's **iPhoto®**
- Create a digital storytelling artifact using **iMovie3®**

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*At-a-Glance Guide**

Create Electronic Portfolios using **Microsoft® Word**

What to do? Here is the process we will cover:

Collect the documents in electronic form and store in a single folder

Write brief reflection on each document using **Insert Menu -> Comment** command **OR** include a database that contains a list of your artifacts and your reflections.

Create the Reflective Portfolio in Word

- Open a new Word document and insert the Standards to be used in your reflections (or use a template document that lists the standards that you want to use as the framework for this portfolio).
- Use Outline View of Word to create headings for each standard which show in the Document Map (left window), becoming "bookmarks" for navigation (select the **View Menu -> Outline Layout** and **View Menu -> Document Map**)
- In the Outline View, at the beginning of the document:
  - Create a heading for a Cover Page for your portfolio
  - Create a heading for a Table of Contents for the Portfolio
  - Right after the Table of Contents, create a page to write an introduction, which is your overall reflection on the portfolio.
- Use the Style Menu to force page breaks for each Level 1 header
- Under each standard, include three paragraphs and headers: Evidence, Reflection, Direction or Future Learning Goals
- Identify the artifacts from the Excel spreadsheet for each standard
- Write Reflections and Future Learning Goals for each standard
- Create Hyperlinks to Artifacts
- Create a Table of Contents for the Portfolio with links to each section

Conversion: When completed, this document can be converted into either HTML or PDF, but the hyperlinks may need to be re-created in the new format. After conversion, the document can be further edited with the appropriate software tools (Adobe Acrobat or a web page editor).

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Cross-Reference Standards with Electronic Portfolio Artifacts using **Microsoft® Excel**

What to do? Here is the process we will cover:

Collect the documents in electronic form and store in a single folder

Write brief reflection on each document using **Insert Menu -> Comment** command **OR** include a database that contains a list of your artifacts and your reflections.

Create a list of the artifacts you have collected using an Excel Spreadsheet (or a database, or a Table in Word). An Excel template (Artifacts-at-a-glance.xls) is available.

- Enter the names of the artifacts
- **Hyperlink** to the documents. (**Insert Menu -> Hyperlink**)
- Set up columns for each of the standards to be demonstrated (or use template)
- Decide which standards each artifact demonstrates and place a mark in the column under each standard.
- Create a comment in the field that explains your rationale for selecting this standard for each artifact.

This document could be used as a "Tracking Sheet" to determine if learners recognize the standards being addressed in an assignment. This process can also pinpoint deficiencies in the curriculum to identify where standards are not being addressed.

The Comments may be printed with the Worksheet, either in the place where they appear (Select **View Menu ->Comments**) or at the bottom of the page when printed. Select **File Menu -> Page Setup,** select the **Sheet** tab, and select **At End of Sheet** in the **Comments** pop-up menu.

Conversion: When completed, this document can be converted into either HTML or PDF, but the hyperlinks may need to be re-created in the new format. After conversion, the document can be further edited with the appropriate software tools (Adobe Acrobat or a web page editor).

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Present Electronic Portfolios using **PowerPoint** or **Keynote**

What to do? Here is the process we will cover:

Collect the documents in electronic form and store in a single folder

Write brief reflection on each document **OR** include a database that contains a list of your artifacts and your reflections.

Create the Reflective Portfolio in PowerPoint or Keynote

- Open a new document and select the **View Menu -> Online Layout**
- Create the Cover Slide for your portfolio
- Insert the Standards/Outcomes/Goals to be used in your reflections (one per slide)
- On each standard slide, include three headers and paragraphs: Reflection, Evidence, Future Learning Goals. Write Reflections on each standard, identify evidence to support your reflections, and formulate future learning goals
  NOTE: Written reflections are best completed in word processing documents because the size of a slide will limit the length of the reflection.
- If reflections or artifacts are in audio or video format, then link the multimedia files to the appropriate slides.
- Use the Outlining capabilities of the software to create headings which show in the Outline View (left window), becoming "bookmarks" for navigation
- Create a Table of Contents and links to each section (only in PowerPoint at this time)
- Create hyperlinks to artifacts (can only be followed in Slide Show mode)
  – this function is not available in the first release of Keynote.
- Right after the Table of Contents, write an introduction to the reader, which is your overall reflection on the portfolio.

Conversion: When completed, this document can be converted into either HTML or PDF, but the hyperlinks may need to be re-created in the new format. After conversion, the document can be further edited with the appropriate software tools (Adobe Acrobat or a web page editor).
Slide shows created with either program can also be converted into QuickTime movies.

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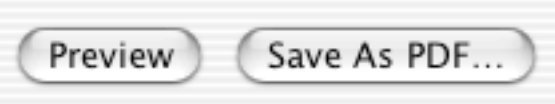
Build Electronic Portfolios with Macintosh **OS X** and **PDF**

What to do? Here is the process we will cover:

Convert artifacts to PDF using File Menu -> Print



In Word or PowerPoint *(or your favorite application… whatever you can print to a printer you can turn into a PDF file with Mac OS X. PDF stands for Adobe Acrobat **P**ortable **D**ocument **F**ormat.)*

- Complete Standards Reflection documents with a Cover Page and Table of Contents
- Write an overall reflection on the portfolio document.
- Convert these documents to PDF. Macintosh OS X creates an uncompressed PDF file. See note below on how to compress these files with the full version of Adobe Acrobat.

In Adobe Acrobat (the full version, not the free Acrobat Reader)

- Using Acrobat Notes, write a brief reflection about each artifact after it is converted
- If publishing portfolio on a CD-ROM, merge documents into a single PDF file
  - Create bookmarks for navigation
  - Create links to artifacts from locations identified throughout Reflection document
  - *Optional*: Create a summary of the Notes reflections and insert into document
  - Link movies into Acrobat document and add other multimedia files
  - Write entire portfolio (.PDFs and .MOVs) to CD-ROM
- If publishing a WWW-based portfolio with artifacts converted to PDF:
  - Compress files for faster downloads from the WWW (see below)
  - Link PDF files to appropriate places in the web pages using a Web page editor
  - Upload files to web server

Compress a PDF file created by OS X

(You will need the full version of Adobe Acrobat, not just the free Acrobat Reader).

- Open the book in Adobe Acrobat. **Save As…** a PostScript File.
- Open Adobe Acrobat Distiller and open the PostScript file you just created.
- Select the Screen or Print Job Options and give the file a new name. Distiller will compress the PostScript file and will create a much smaller PDF file.

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Develop Electronic Portfolios with **Netscape Composer**

or your favorite Web Page Editor

What to do? Here is the process we will cover:

Collect the documents in electronic form and store in a single folder

- Convert artifact files into HTML or PDF format.
  Save as Web Page… or **Print -> Preview**
- Create a list of artifacts (a database or a spreadsheet, converted to HTML in the source application)

Create the Reflective Portfolio in Netscape Composer

- Create a template that contains the navigation structure to link to standards that you want to use as the framework for this portfolio. Use the template to create the following pages:
  - Create a Cover Page for your portfolio
  - Create a Table of Contents for the Portfolio with hyperlinks to each page
  - Create a page to write an introduction, which is your overall reflection on the portfolio.
  - Create a page for each standard. Under each standard, include three paragraphs and headers: Evidence, Reflection, Direction or Future Learning Goals
- Identify the artifacts from your list of artifacts
- Write Reflections and Future Learning Goals for each standard
- Create Hyperlinks to Artifacts
- Apply creative touches with graphics and text layout options
- Upload all files to your web server

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Collect, organize and publish image-based e-portfolios using Apple's **iPhoto®**

What to do? Here is the process we will cover:

Here are just a few instructions to get you started to create an artifact or a complete electronic portfolio that is primarily comprised of images that are either scanned or taken with a digital still camera. I have correlated iPhoto's steps with my stages of electronic portfolio development (http://electronicportfolios.com/portfolios/EPDevProcess.html).

Import Images (Stage 2: Creating the digital archive)

Import your images using **File Menu -> Import…** .

Organize images

Create a new Album to hold images for the portfolio.
Drag images from the Library into the new Album.
Click and drag the images into the appropriate order.
Assign Keywords
Create a new Album for each version of the portfolio that you want to create (i.e., one for a Book, another for a QuickTime movie).

Edit images

Crop pictures
Adjust brightness and contrast
Remove red-eye
Constrain the size

Create a Book: (Stage 3: The Reflective Portfolio)

Select Theme of Book
Select Page Design
Add comments to each image
– these comments provide the reflective rationale for including each image
Preview and Print (to PDF!)

Share (Stage 5: The Presentation Portfolio) in many formats:

Print in paper or electronic (PDF) format
Slide Show with music (from iTunes)
Home Page (create an HTML Gallery)
QuickTime movie (Edit Movie, add a narration sound track with QuickTime Player Pro)

Conversion: When completed, images collected in Albums can be converted into HTML, PDF, or QuickTime movie formats. Home Pages can be uploaded to your iDisk account.

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Create a digital storytelling artifact using **iMovie3®**

"Portfolios tell a story…put in anything that helps to tell the story" (Pearl and Leon Paulson, 1991)

A reflective digital storytelling artifact uses a digital video editing program to tell a story with still images, an audio/music track and your voice narration.

Much of the philosophy and development process for Digital Storytelling can be found at The Center for Digital Storytelling (http://www.storycenter.org/)

Here is a summary of the process:

- Collect digital images in JPEG format to be used in the story; scan or use digital camera.
- Create a storyboard that outlines the story to be created. You could begin by importing and organizing the images first on iMovie's "shelf" (or iPhoto or Inspiration)
- Write a script, select already-written reflections, or plan to record the narration extemporaneously (more appropriate with younger children).
- Record audio clips and place it on Audio Track #1 on the Timeline Viewer (or import from an audio file)
- Place the images in the appropriate order on the Clip Viewer or the Timeline Viewer in iMovie3 (import from your iPhoto Library)
- Apply "still motion" effects (the "Ken Burns" effect)
- Add any titles, and insert any effects, where appropriate.
- Insert transitions between images, as appropriate. Adjust the length of each image to match the audio track.
- Add a music track to Audio Track #2. (import from your iTunes Library)
- Export story to either videotape or Quicktime format or iDVD.
- Link Quicktime movies to Web Pages (using a Streaming Server) or to PDF files before creating CD-ROM

For a free online tutorial on iMovie2, go to http://www.atomiclearning.com/ and select the Free iMovie tutorial.

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Stage 5 The Presentation Portfolio

- Record the portfolio to an appropriate presentation and storage medium: CD-Recordable disc, WWW server, or video tape (soon DVD).
- Present the portfolio before an audience (real or virtual) and celebrate the accomplishments represented.
- Evaluate the portfolio's effectiveness in light of its purpose and the assessment context.

Contents

- Publish Electronic Portfolios on **CD-ROM – Macintosh**
- Publish Electronic Portfolios on **CD-ROM – Windows**
- Publish Electronic Portfolios on the **Internet**
- Publish Electronic Portfolios on **Videotape**
- Publish Electronic Portfolios on **DVD**

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Publish Electronic Portfolios on **CD-ROM - Macintosh**

The final version of your portfolio can be "burned" to a CD-ROM. CD-Recordable disks are usually the "write-once" variety, which means they cannot be changed. Your files should be complete before taking this step. We also recommend doing a final check of all files before recording the CD (see Step 4 below).

A few pointers on linking videos or other artifacts to portfolio files before burning a CD:

- **Place all files in one folder:** Before you link your videos to the appropriate place in your portfolio file, be sure to collect all of your videos and your portfolio and presentation together in the same folder.
- **Naming files:** Also, be sure the file names have no spaces. **Don't change file names after you link your movies**. And don't move your files out of their folder after you link your movies.

Burning the CD with finished files:

1. Insert a blank CD into a Macintosh with a CD-RW drive, Combo drive or Super drive.
2. The computer will prompt you to name the CD and click "Prepare".
3. A "virtual disk" will show up on the desktop of the computer. Open it and drag all your portfolio files into that window.
4. Make a final test of your files by opening and trying all links, including video.
5. When you have the window arranged the way you want it when the CD is loaded in your computer (we suggest leaving the window open), **Select Burn CD** from the **Special Menu** (the last time you can drag the "virtual disk" image into the trash, as if you are ejecting it).
6. You may also drag the CD image in the trash to begin burning the CD.
7. The computer will ask you to click "Burn", and then will proceed to write the CD and verify it.
8. You will need to repeat the process for each CD you want to burn.

For further information on CD recording, consult: http://hotwired.lycos.com/webmonkey/00/38/index4a.html

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Publish Electronic Portfolios on **CD-ROM - Windows**

The final version of your portfolio can be "burned" to a CD-ROM. CD-Recordable disks are usually the "write-once" variety, which means they cannot be changed. Your files should be complete before taking this step. We also recommend doing a final check of all files before recording the CD (see Step 4 below).

A few pointers on linking videos or other artifacts to **portfolio** files before burning a CD:

- **Place all files in one folder:** Before you link your videos to the appropriate place in your portfolio file, be sure to collect all of your videos and your portfolio and presentation together in the same folder.
- **Naming files:** Also, be sure the file names have no spaces. **Don't change file names after you link your movies**. And don't move your files out of their folder after you link your movies.

Burning the CD with finished files: *all of these steps need to be checked and adjusted*.

1. Insert a blank CD into a PC with a CD-RW drive and launch the CD burning application (for these instructions, we used Easy CD Creator 4 by Adaptec – now Roxio)
2. **Select "New CD Layout"** on Tool Bar, then **select "Data CD"** from pop-up window.
3. Drag all your portfolio files from the **"Explorer"** window to the **"CD Layout"** window and **Rename** the CD. You can **Remove** any unwanted files at this point.
4. Make a final test of your files by opening and trying all links, including video.
5. When the CD Layout window is arranged the way you want it when the CD is loaded in your computer, **Select "Create CD"** from the Tool Bar. A "CD Creation Setup" window will appear. Set the options under the "Advanced" button and **click "OK"**. A "system Test" window will appear. (If this window does not appear to be making progress after a couple minutes, click **"Cancel"**.) The "CD Creation Process" window will appear and track the recording progress. **Click "Close"** when done.
6. Repeat step 5 to burn additional CDs.

For further information on CD recording, consult: http://hotwired.lycos.com/webmonkey/00/38/index4a.html

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Publish Electronic Portfolios on the **Internet**

There are two different strategies for publishing electronic portfolios on the Internet: using a customized system or creating your own portfolio in WWW-compatible formats and posting those files to a web server. What is required to publish electronic portfolios on the Internet? Find web server space to store your portfolio, and find appropriate software to convert your document into WWW-accessible format

Finding online e-portfolio systems

There are a variety of commercial systems that are available to create and store online portfolios. A partial list of these sites can be found at http://electronicportfolios.com/portfolios/bookmarks.html#vendors Most of these online systems do not require any special software, other than a web browser to manage the portfolio. Costs vary but are comparable to the price of a textbook, and some can only be purchased as an institution-wide adoption. Many schools and universities are installing their own portfolio servers.

Finding a Web Server to post your own portfolio

You can also create your own files in HTML (HyperText Markup Language) and other web-compatible files, such as Adobe Acrobat PDF (Portable Document Format) files. There are a variety of Web servers that you can use:

- **Universities** and **Schools** usually provide Web server space for students and faculty (usually 5-10MB). The address is usually: http://yourinstitution.edu/youraccount/yourpages.html
- **Internet Service Providers** (ISPs) often offer web space as part of their monthly fee (usually 10-20 MB). The address is usually: http://yourISP.net/youraccount/yourpages.html
- **Free web server space** - Yahoo! provides GeoCities http://www.geocities.com and Google provides a list of Free Web servers: most of them add banner ads or pop-up ads on your pages! http://directory.google.com/Top/Computers/Internet/Web_Design_and_Development/Hosting/Free/Personal/?il=1
- You can also purchase your own domain name and set up your own computer as a web server, or purchase space on a web hosting service that can host your domain for an additional fee. To find information about web hosting and domain name registration, consult your ISP or Google: http://directory.google.com/Top/Home/Consumer_Information/Computers_and_Internet/Internet/Web_Hosting/ The address is usually: http://yourdomainname.com[or.org]/yourpages.html

Software for Creating Web Pages and Uploading to the Internet:

There are two types of software needed to upload your portfolio to the Internet: software to edit the HTML files and then software to upload the files to a web server. There are a variety of popular HTML editors that are either free or reasonably priced to manage these files. Some suggested programs include: **Netscape Composer** (free), **Microsoft Front Page** (included with Microsoft Office for Windows), **Macromedia Dreamweaver**, **Adobe GoLive**. To upload your files to a web server, your HTML editor may have FTP (File Transfer Protocol) capability. If not, there are many FTP programs, such as **Fetch** for the Macintosh and **WS FTP** for Windows.

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Publish Electronic Portfolios on **Video Tape**

There are some audiences for your electronic portfolio that do not have the technological capabilities to read a CD-ROM or access the Internet. However, most households have video cassette recorders (VCRs) to be able to view the portfolio on videotape. What is required to publish electronic portfolios on videotape? You will need some means to convert your digital portfolio to analog videotape. There are two strategies: using a digital video camera and a digital video editing program; or by connecting the "video out" from your computer to the "video in" on your VCR.

Connecting the "Video Out" from your computer to the "video in" on your VCR

The easiest way to connect a computer to a VCR is to use an "analog" video out (usually a yellow RCA jack) that is a part of many computer systems that are designed to connect to a TV set. Many laptop computers now double as DVD players, and have the "video out" port and cable to be able make this connection. Connect an RCA cable between the "video out" on the computer and the "video in" on the VCR. Audio is another matter. Radio Shack sells an inexpensive "mixer" that can be used to connect several audio sources, including a microphone and a CD or cassette player.

If you do not have the analog "video out" port on your computer, there are conversion boxes available, that uses the monitor connection to convert the computer image to analog video.

This process takes less time, but the quality of the video image is not as high. This method is not recommended if you have a lot of digital video in your portfolio. Consult http://www.hyperstudio.com/showcase/portfolio.html and click on **VCR as a Printer** at the bottom of the page to download detailed instructions for hooking your computer to a VCR.

Using a Digital Video Camera and Digital Video Editing Software

Since all of the data in an electronic portfolio stored on a computer is in digital format, it would seem easier to publish with digital video (DV) software and DV camera. However, a small percentage of the data is probably in DV format, and so would need to be converted into images that could be included in a "digital story" published to videotape.

With a DV editing program on your computer, create a digital video of the elements of your portfolio that you want to go on a videotape. This is the best process for portfolios that contain a lot of digital video clips. Use the digital video editing program to export to videotape through the DV camera. This step may involve using the DV camera to transfer the video from DV tape to analog (VHS) tape on a VCR (most DV cameras have analog "video out" with appropriate cables to connect to a VCR "video in" connections. This process takes more time, but produces a much better result.

There are other "At-a-Glance" guides that cover this process in more detail: *Create a Digital Storytelling Artifact using **iMovie3*** and *Digitizing **Video** for your Electronic Portfolio using a **Digital Video Camera**.* Apple's iPhoto program can also convert images into digital video that can be used in a digital video editing program: *Collect, organize and publish image-based e-portfolios using Apple's **iPhoto**.*

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