Hamilton™ ELECTRONICS

Digital Camera Kits - Teacher's Reference

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Introduction

Welcome and thank you for purchasing the Hamilton Digital Photography Exploration Kit. You and your students will find exciting ways to enhance teaching and learning with digital images. This kit will help you incorporate digital images into almost any lesson or project and this manual will help you get started on this wonderful adventure by introducing you to the camera and digital imaging.

In the late 1830's and early 1840's scientists and artists had begun developing the new medium of photography. Now, not even two-hundred years later, the photograph has become an integral part of our everyday lives. No matter where we are or what we do, photographic images are a part of our experience.

Visual literacy needs to be an important part of everyone's educational experience. Just as people read text they should be able to read images and understand how images communicate ideas and experiences.

The digital revolution continues to have a transforming influence on photography. Digital photography has made it possible for teachers to give students the opportunity to learn visual communication skills firsthand. Darkrooms and chemicals are no longer needed for students or

teachers to produce images for presentations or to document a class trip or science experiment. Digital photography also gives teachers an opportunity to enrich the educational experience of their students by making images an integral part of any lesson.

This Teacher's Reference contains internet resource and lesson suggestions for using your Hamilton Digital Camera kit in the classroom. For technical information on the cameras please refer to the Camera Manual included with the kit.

General Camera Maintenance and Safety

- Avoid exposing the Hamilton Digital Camera to moisture and extreme temperatures.

- Clean the outside of the camera by wiping it with a clean, dry cloth. Never use harsh or abrasive cleaners or organic solvents on the camera or any of its parts.

- Do not disassemble or touch the inside of the camera. This could result in electrical shock.

- Do not use cleaning solutions unless they are designed specifically for camera lenses.

- Blow gently on the lens to remove dust and dirt. Moisten the lens or LCD screen by breathing lightly on it. Wipe the lens or LCD screen gently with a soft, lint-free cloth or an untreated lens-cleaning tissue.

Working With Digital Images

One picture may be worth a thousand words but digital images may be used in thousands of ways and seen by thousands of people. Digital images offer students and teachers opportunities to be creative with photographs. Digital images can easily be used to enhance students' learning and teachers teaching. Listed below are some of the things you can do with the digital photographs you and your students take with the Hamilton Digital Camera.

- Unlimited Copies - digital image files may be duplicated and/or printed many times

- Unlimited use of the same image - students may use the same digital image in different documents

- Scaled to print in different sizes - high resolution digital images may be printed in large or small sizes

- Shared via e-mail - digital images may be sent to anyone with an e-mail account

- Shared via World Wide Web - web sites can display digital images

- Presentations - images can be used in PowerPoint or other computer presentations

- Digital video - images can be imported into digital video projects and transferred to videotape or DVDs

- Create database - images can be imported into a database, for example, a database on types of plants

- Editing for emphasis- copies of digital images can be drawn on or edited without ruining the original image

- Image storage - digital images may be stored on a computer, CD, disk or web site

- Slide shows - computers can run slide shows of digital images

- Portfolios - image portfolios of student projects can be stored, presented or posted on the web

Software for Digital Imaging

iPhoto - Mac OS X Only

iPhoto comes installed with Mac OS X and you can do basic image editing with the program. iPhoto is easy to use and is also a great way to store and organize your digital images. Once you have used iPhoto to capture your digital images, see the section of this manual on Mac OS X - Downloading your Images. You can edit and enhance your photographs by simply double-clicking on an image. For more information on iPhoto launch iPhoto on your computer and select iPhoto Help from the Help menu at the top of the screen.

Photoshop Elements, Microsoft Paint, Appleworks

There are many products that you can use to edit and transform your digital photographs. For PCs, Microsoft makes a program called Paint and for Macs, Apple offers Appleworks, which has a paint module. Both of these software products may already be installed on your computer and are a great way to get started in digital imaging as is Photo Express, the program that is included in the Hamilton kit. But if you decide to get serious about digital imaging the next step is Photoshop Elements. This program is a lite version of Photoshop, the professional image editing

program. Adobe, the maker of Photoshop Elements offers an excellent educational discount for the program. Listed below are some internet sites that will help you learn more about Microsoft Paint, Appleworks and Photoshop Elements.

Microsoft Paint

http://www.microsoft.com/windows2000/en/professional/help/default.asp?url=/windows2000/en/professional/help/app_paintbrush.htm

Appleworks

http://www.apple.com/appleworks/

Photoshop Elements 2.0 Training

http://www.adobe.com/education/training/photoshop_elements/main.html

Photoshop Elements 2.0 Lessons for Educators

http://www.adobe.com/education/curriculum/ps_elements_tutorials.html

Jay Arraich's Photoshop Elements Tips

http://www.arraich.com/elements/psE_intro.htm

Photoshop Elements Lessons and Examples of Digital Art

http://www.princetonol.com/groups/iad/lessons/high/cubismphoto.htm

The Photoshop Roadmap

http://www.photoshoproadmap.com/photoshop-tutorials-tips/photoshop-elements.html

Saving Digital Images

Back in the days of film cameras, we all knew that the negatives that came with our prints should be preserved and stored if we ever wanted to make more prints. When your pictures are digital, you don't have a negative, but you do have the original picture file. You and your students should treat the original picture file as the negative and save your original image files that you download from your camera in folders in an organized way that best suits you and your students' needs. If you are using Mac OS X, iPhoto does it for you. If not, it might be best to make folders with the dates that you have taken the pictures. You may also choose to have folders with the names of the events or places you have photographed. Whatever you decide be sure to save and backup, make copies of, your picture files. Remember, your picture files are more important than your prints because you can make many more prints from one picture file.

The best way to preserve your digital images is to burn them on a CD. CDs are inexpensive and may store up to 700 MBs of data. That means that

you can store hundreds of pictures on one CD. Burning picture files on CDs is also a great way to share pictures with others. You can burn extra CDs to give to colleagues, students and/or friends.

Presenting Digital Images

Making prints and CDs are not the only ways to share your digital images. Digital photographs may be included in presentations using programs like PowerPoint or Keynote. Digital images may also be included in multimedia projects created by a variety of programs like MovieWorks, eZedia, and HyperStudio. Digital photographs may be presented as slide shows on computers or TVs.

Posting pictures on the Internet is a popular way to present photos to an unlimited audience. If you are using a program like Photoshop Elements there is a Create Web Photo Gallery option in the File Menu. There are also many sites like Yahoo Photos (http://f2.pg.photos.yahoo.com/) that offer a free and easy way to post your pictures online. Do remember, that if you post pictures of students, you need to get permission first.

Lesson Ideas

There are thousands of ways to use digital photography to enhance your curriculum. You probably purchased the Hamilton Digital Photography Exploration Kit because you had some of your own ideas on how to use a digital camera with your students. This section lists some starting points for incorporating digital imaging into your lessons. Internet sites that have examples of lessons using digital imaging are also included.

General Ideas for All Subjects

- Digital Photography is a great way to document any classroom activity or field trip. Encourage students to see themselves as reporters or documentary photographers. The students' assignment could be to create a photographic essay that documents a classroom activity or class field trip.

- Add captions to photos and print them to create posters.

- Use photos in multimedia presentations.

- Have students make flash cards by taking photographs demonstrating new vocabulary words or concepts. Print extra copies of the flash cards to develop a valuable classroom resource.

- Create a visual seating chart that not only has the names of your students but their pictures too.

- Students may use photographs to document their projects and create visual portfolios of their work.

- Students may use photographs to illustrate writing assignments.

- Students may use digital photographs in newspapers or magazines they have created for units taught in your class.

- Students may create a visual database of photographic images.

- Students may use digital imaging software to draw and paint on a picture they have taken to illustrate something taught in class.

- Combining images downloaded from the internet with photographs students have taken is a great way to expand the use of digital images in your curriculum. An example of this would be if a class is studying Spain, students may download a picture of a historic site in Spain and then, using imaging software, take a digital picture of another student and create an image that makes it look like the student is visiting the historic site.

- Digital Scavenger Hunt - students find things and photograph them.

Lesson Plans That Use Digital Images

The web sites listed below offer a wide range of lesson plans and ideas that will help you get the most out of your Hamilton Digital Camera.

Pics4Learning Lesson Index contains a listing of lessons in Language Arts, Science, Math and Social Studies.
http://www.pics4learning.com/lessonplans.php

North Central Regional Technology in Education Consortium Lesson Index provides some lesson plans created by teachers that demonstrate some ways in which pictures and other graphic resources might be useful in a classroom. http://www.ncrtec.org/tl/camp/lessons.htm

Kodak Lesson Plans - contains a list of lessons organized by subject and grade level.
http://www.kodak.com/US/en/digital/dlc/plus/chapter5/lessonPlans.shtml

Smile! Digital Cameras Can Make Your Day - an article on using digital cameras in the classroom.
http://www.educationworld.com/a_tech/tech147.shtml

Teacher To Teacher - contains lesson ideas that use digital cameras submitted by teachers from around the world.

http://www.brunswick.k12.me.us/lon/lonlinks/digicam/teacher/home.html

75 Ways to Use Your Digital Camera - this site lists ideas to get students involved in taking pictures as an activity to reinforce various skills.

http://www.semo.net/suburb/mgilmer/digcam/index.htm

Using the Digital Camera in the Primary Classroom - lesson ideas for elementary students.

http://www.hardin.k12.ky.us/res_techn/TEC/digitalcamera/primary.htm

Photo Collages - Photomosaics - digital imaging art lessons.

http://home.wi.rr.com/clipartngraphics/ArtEdTech/ArtEd3.html

Digital Imaging - Mr. Olejarz - digital imaging art lessons.

http://www.wyckoffschools.org/eisenhower/teachers/olejarz/digitalimaging/index.html

Emerald Ridge High School Digital Imaging Course - digital imaging art lessons. http://digimg.erhs.org/index.html

Internet Resources and Handouts

Finding Images on the Internet

For some lessons you may want your students to use pictures of objects or places that they may not be able to photograph in addition to photographs they have taken. This section includes information on how to find images on the Internet.

Image Search Engines

Anyone who has used the Internet has probably used a search engine like Google or Yahoo. Most search engines have an image search feature that lets you search the internet for pictures. A student may go to an image search engine, look for a picture of the Great Wall of China, download the picture, and use imaging software like Photo Express or Photoshop Elements to paste an image of a fellow student into the picture of the Great Wall of China. The Google Advanced Image Search site may be found by going to **www.google.com** and clicking on Images and then selecting Advanced Image Search. The url of the page is: **http://www.google.com/advanced_image_search?hl=en**. This page, pictured below, lets the user refine their search to get the right image. If you are using downloaded images for print be sure to select medium or

large in the file size pull down menu. Notice that the bottom of the

Advanced Image Search window has a SafeSearch feature. It is wise to

select the "Use strict filtering" option to ensure that the images are

appropriate for school projects.

Web Sites Offering Free Images

There are also web sites that specialize in offering free images for use in educational projects. The images on these sites are a valuable resource that can be used along with the digital photographs your students take.

Pics4Learning - is set up for use by educators and students. This site also has lesson plans. http://www.pics4learning.com/

Kid's Image Search Tools lists special image databases. http://www.kidsclick.org/psearch.html

Freefoto bills itself as the "largest collection of free photographs for private non-commercial use on the Internet." http://www.freefoto.com

picsearch bills itself as "a search engine for pictures and images that allows children to surf in safety as all offensive material is filtered out by our advanced filtering systems." http://www.picsearch.com/

Clip Art

There are also web sites that offer free clip art. Clip art may be pasted into photographs and/or used in presentations.

Teacher Files - http://www.teacherfiles.com/clip_art.htm

Discovery Channel Clip Art -

http://school.discovery.com/clipart/index.html

Awesome Clip Art for Kids - http://www.awesomeclipartforkids.com/

The Graphic Site - http://home.wi.rr.com/clipartngraphics/Site/Site.html

Kids Domain Clip Art - http://www.kidsdomain.com/clip/