Using Digital Cameras in the Classroom

The Basics

Donna M. Dick

Agenda

- Some Basics
- Getting Started
- Taking Pictures

- Pixels & Resolution
- Storage & Transfer
- Power supply
- Camera settings
- Photo tips
- Integration into the Classroom

Pixels & Resolution

So… What are pixels?

- Word – contraction of

PIcture + Element = Pixel

Pixels - basic building blocks of every digital image

Increased magnification

- Each pixel has color and brightness information

www.ltlimagery.com/ resolution.html

- The more pixels in an image the more smoother it will be (printing).
- The more pixels in your image, the more data your computer has to store for that photo.

How are Pixels and Resolution Connected?

Resolution is…

- How many pixels your image has in both

Height & Width

Resolution 640 X 480
(.3 mega pixels)
= 307,200 pixels

640

480

Low resolution – emails & web postings

Resolution 1600 X 1200 = 1,920,0000 or 2 mega pixels

Notice the larger size of this image

1600

1200

Midrange resolution
Print best at 4” X 6” size (300 dpi)

People get confused about how “big” a digital image is.

- Pixels are more tightly packed for printing than for display on a computer screen
- Computer monitor displays images at 72 ppi (pixels per inch)

Setting Resolution Ask yourself…

- What am I going to do with the picture?
  - PowerPoint presentation or Web
  - Print
- What is more important the quality of the photo or the amount of space on your camera or computer hard drive?

What resolution does your camera have?

Example: Kodak EasyShare C913

- 9.0 MP
- 8.0 MP
- 6.8 MP
- 5.0 MP
- 2.2 MP
- 2.1 MP
- 1.2 MP

Storage & Transfer

Storage & Transfer

- Internal Storage
  - Kodak EasyShare C913 - 16 MB
  - Must connect camera to computer to download
    - USB
- Removable storage card
  - Memory card
- Card Reader

www.amazon.com/exec/ obidos/tg/detail/-/B00008...
www.amazon.com/exec/ obidos/tg/detail/-/B00008...

www.1--digital-camera.com/ Digital-Camera-Memo...
www.1--digital-camera.com/ Digital-Camera-Memo...

Power Supply

Power Supply p 50

- Different types – sizes, shapes
- AA
  - Lithium AA – 700
  - Kodak NiMH 380-450
  - Kodak oxy-alkaline 250-300
  - Alkaline batteries AA 150-200

www.kodak.com/eknec/ PageQuerier.jhtml?pq-loca...
http://www.duracelldirect.co.uk/i/products/61725.jpg

How to Extend Battery Life

- Limit view of pictures on camera screen
- Limit use of camera screen as view finder
- Limit use of flash

Camera Settings

Camera Modes

- Automatically adjust amount of light that exposes the sensor.
- 2 ways
  - **Shutter Speed**
  - **Aperture** (Lens openin

Various modes

- SCN – scene (some listed below)
  - Portrait
  - Night
  - Sports
- AUTO
- Landscape
- Close-up (Macro)
- Video

Close-up - Macro

Allows the camera to focus very close up to the lens.

Optical vs. Digital Zoom

Optical Zoom vs. Digital Zoom

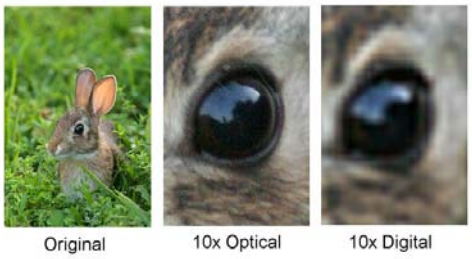
Optical Zoom

- works like zoom lens in film camera
- Image quality stays high

Digital Zoom

- **Crops the image to smaller size**
- **Then enlarges the cropped portion to fill frame**
- **Loss of pixels**
- **Loss of quality**

EXAMPLE:
http://www.photo.net/digital/cameras/basics



File Formats

jpg – most common

A Few Tips for Your Students & Yourself

Rules & Procedures

- Establish a hand-off procedure
  - Camera won't be dropped
  - Formalizes sharing

Shutter Button

- Pushing button is trickiest task for children
- Press half way to lock in focus

http://www.kodak.com/eknec/PageQuerier.jhtml?pq-path=401&pq-locale=en_US

Distance

- Common mistake – taking photo from too far back

http://www.kodak.com/eknec/PageQuerier.jhtml?pq-path=317/10032&pq-locale=en_US

Use Plain Backgrounds

Practice Time

http://thefuntimesguide.com/2005/12/kids_cameras.php

Integration of Digital Cameras into the Classroom

As a writing prompt – school experience

Writing prompt – student artwork

Writing prompt – " If I were a penquin…"

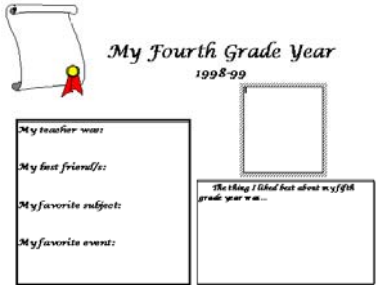
If I Were a Penguin
By: Ian Elliott
If I were a penguin...
I wude flop on the ice and slide on my belly.
And jump in water and play with my friends, and
we might have splash contest. And I wude climb
over icebergs and travel every ware. THE END.

http://www.forsyth.k12.ga.us/backpack/litpack.htm

To record a field trip, allowing the students to write about them at a later time

http://www.forsyth.k12.ga.us/sbeck/digital/goingdigital.htm

To create class books

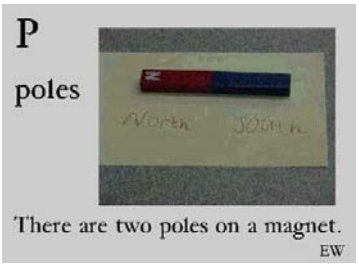


http://www.forsyth.k12.ga.us/sbeck/digital/goingdigital.htm

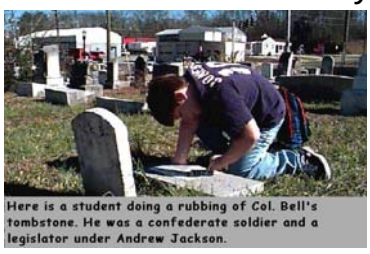
To create ABC books and others

http://www.bgcs.k12.oh.us/reinhart/projects/index.html

Magnet ABC Book



To create a documentary



http://www.forsyth.k12.ga.us/sbeck/digital/goingdigital.htm

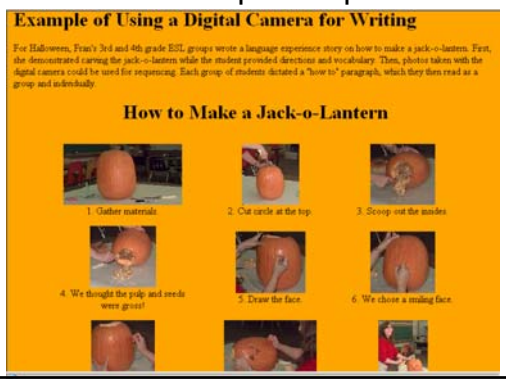
To encourage creativity

http://www.forsyth.k12.ga.us/sbeck/digital/goingdigital.htm

Capture classroom activities for newsletter, web pages, student portfolios

http://www.forsyth.k12.ga.us/sbeck/digital/goingdigital.htm

To illustrate steps in a procedure



Record plant growth

www.victoryseeds.com/.../ starting_seeds.html

Digital Leaf Collection

Name of leaf:

Description:

Take Digital Pictures for Science Fair

http://www.chapman-rienstra.com/photos/G_science_fair_volcano3.jpg

Take pictures of physical science concepts - simple machines

Learning Geometry Terms

- Demonstrating the concepts of perpendicular and parallel by using our bodies (students)
- Later used the pictures to practice the concepts.

The lines between blocks are examples of perpendicular lines.

Voicethread.com

- http://voicethread.com/#q+education.b8909.i62826
- http://voicethread.com/#q+education.b7149.i51949

Using Photos

- Microsoft Word Documents
- PowerPoints
- PhotoStory
- Online – Voicethread.com, Bubbleshare.com

Ideas are endless!

Donna's Web Site

- **www.nwoet.org/donna**
- **Scroll Down & Click on the Digital Camera link which is under the "Media/Hypermedia" title**

Go to Donna's Web site Click on Classroom

References

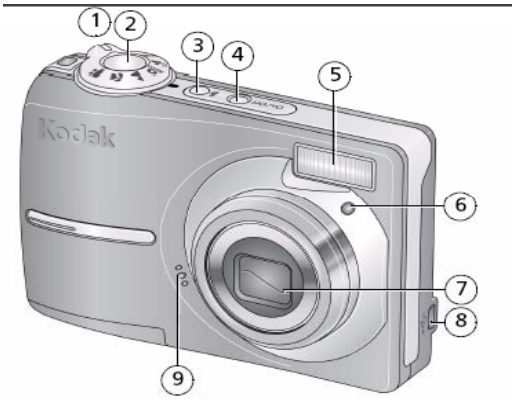
Digital Cameras - a beginners guide
http://www.photo.net/digital/cameras/basics/

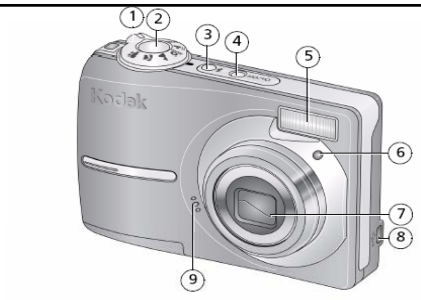
Busch, David D. Hungry Minds, Inc. New York, NY. 2000.

Digital Camera Characteristics
http://www.ncsu.edu/sciencejunction/route/usetech/digitalcamera/

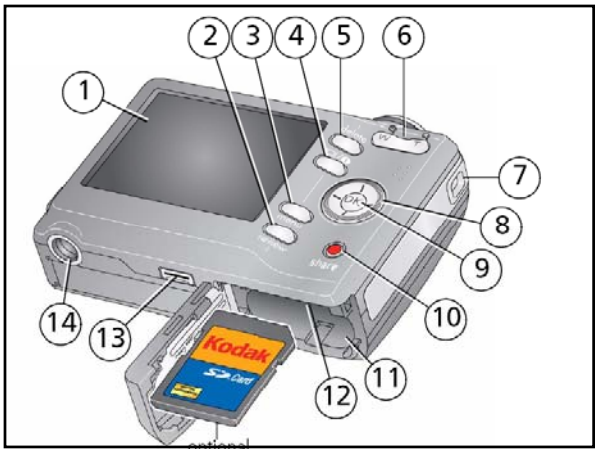
What is …Correct Exposure
http://www.photoxels.com/tutorial_exposure.html

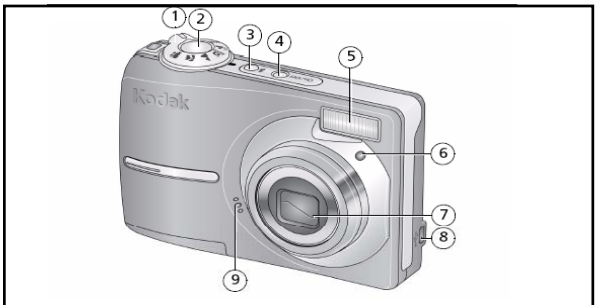
Digital Kids Club
http://www.adobe.com/education/digkids/intro/history.html





1 Mode dial
2 Shutter button
3 Flash button
4 On/Off button
5 Flash
6 Self-timer light
7 Lens
8 USB
9 Microphone





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