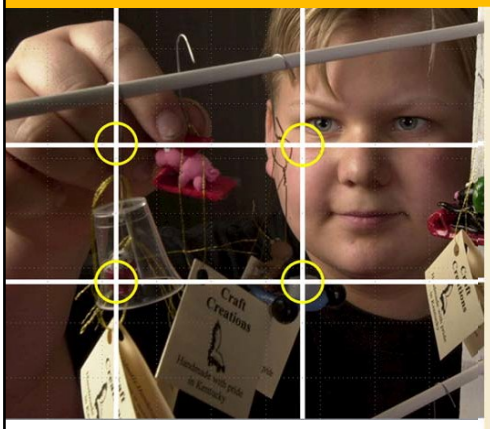


All Things Photography

Stephen Patton
Agricultural Communications Specialist/Photographer
University of Kentucky

David Keto
Media Producer/Director
University of Wyoming

Ana Henke
Publications Supervisor and Graphic Designer, New Mexico State University

University of Wyoming Extension
Cooperative Extension Service, University of Kentucky, College of Agriculture, Food and Environment
NM State University Cooperative Extension Service

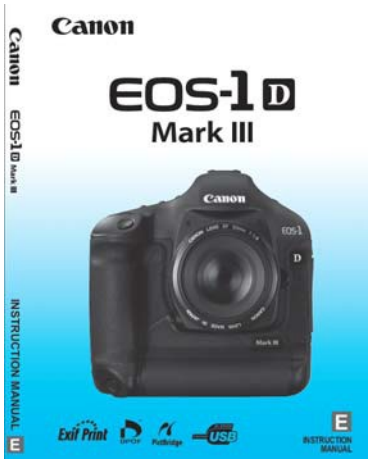
Digital Photography: Just the Basics

Presented by

Stephen Patton
Agricultural Communications Specialist/Photographer
University of Kentucky

What you should know about your camera:

- Where is your instruction manual
- What kind of memory card it uses
- How many megapixels
- What type of battery it uses



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What you should know about your camera:

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- How many megapixels
- What type of battery it uses

Murphy's Memory Card Capacity Chart

Camera	1.0 GB	2.0 GB	4.0 GB	8.0 GB	16 GB	32 GB
6 Megapixel JPEG	300	600	1200	2400	4800	9600
8 Megapixel JPEG	270	540	1080	2160	4320	8640
9 Megapixel JPEG	255	510	1020	2040	4080	8160
10 Megapixel JPEG	225	450	900	1800	3600	7200
12 Megapixel JPEG	200	400	800	1600	3200	6400
15 Megapizel JPEG	150	300	600	1200	2400	4800
22 Megapixel JPEG	135	270	540	1080	2160	4320

Approximate Number of Images Per Card*

* Exact Number of images will vary from camera to camera. Estimates based on "High-Resolution" camera settings with the least amount of JPEG compression. By shooting at the "Normal" or "Low" resolution you can approximately double the capacity of the card.

What you should know about your camera:

- Where is your instruction manual
- What kind of memory card it uses
- How many megapixels
- What type of battery it uses


FUJIFILM
XP
WATER / SHOCK / DUST
FREEZE PROOF
FUJINON LENS 5x WIDE OPTICAL ZOOM
FINEPIX


Replace NP-45
Li-ion 3.7V 800mAh
SYNERGY DIGITAL
www.Synergy-Digital.com
CAUTION:
• DO NOT INCINERATE.
• DO NOT EXPOSE TO HIGH TEMPERATURE.
• DO NOT DISASSEMBLE.
• USE SPECIFIED CHARGER ONLY.


Fits CAN. LP-E6
7.4V 1800mAh
Use specified charger only.
CAUTION


ANSMANN
ACCU-BATTERY more then 1 year standby
max e
2500mAh

Camera Settings

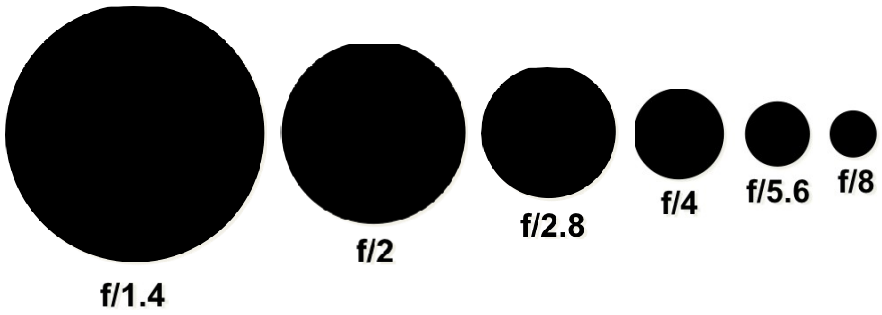
Know how to set:

- ISO = light sensitivity setting
- F-stop/Aperture
- Shutterspeed
- Image quality setting
- Image Size
- White Balance
- Colorspace

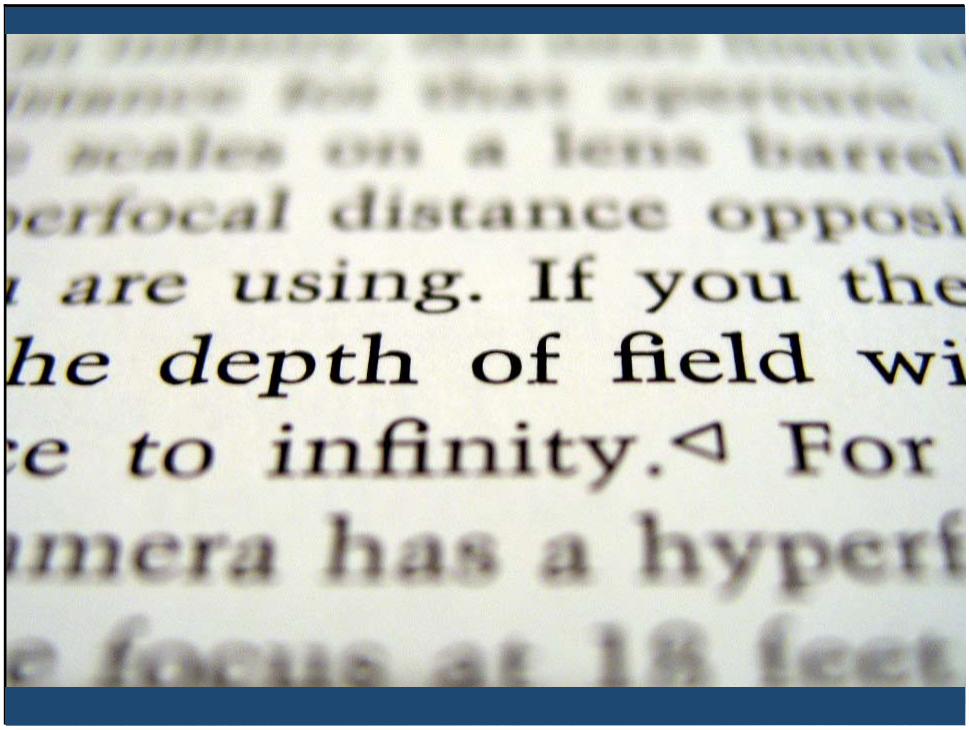
ISO = light sensitivity

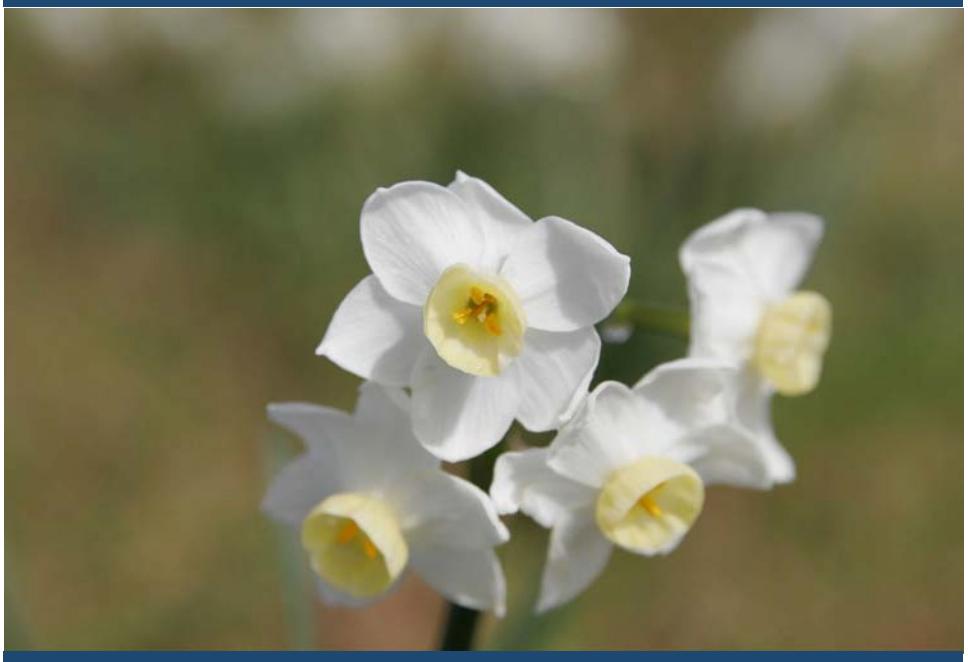
- 100
- 200
- 400
- 800

F-stop/Aperture



The larger the opening, the less depth of field you have; meaning less viewing area in focus from front to back


scales on a lens barrel
perfocal distance opposi
are using. If you the
he depth of field wi
e to infinity. For
mera has a hyperf
e focus at 18 feet



Shutterspeed

1/500 of a second to stop action

1/30 of a second to blur action

Image quality setting

Quality

The size of the image

Approximate Values for Recording Pixels

Recording Pixels				Purpose*
L (Large)	8M	3264 x 2448 pixels	High ▲	Printing to about A3-size 297 x 420 mm (11.7 x 16.5 in.)
M1 (Medium 1)	5M	2592 x 1944 pixels		Printing to about A4-size 210 x 297 mm (8.3 x 11.7 in.) Printing to about Letter-size 216 x 279 mm (8.5 x 11 in.)
M2 (Medium 2)	3M	2048 x 1536 pixels		Printing to about A5-size 148 x 210 mm (6 x 8.3 in.)
M3 (Medium 3)	2M	1600 x 1200 pixels		Print postcard-size prints 148 x 100 mm (6 x 4 in.) Print L-size prints 119 x 89 mm (4.7 x 3.5 in.)
S (Small)	0.3M	640 x 480 pixels	▼ Low	Send images as e-mail attachments or shoot more images

Compression

Approximate Values for Compression Settings

Compression		Purpose
Superfine	High Quality	Shoot higher quality images
Fine	↕	Shoot normal quality images
Normal	Normal	Shoot more images

Lossy Compression
(Destructive)

Image Data Sizes (Estimated)

Recording Pixels	Compression		
	Superfine	Fine	Normal
L 3264 x 2448 pixels	3436 KB	2060 KB	980 KB
M1 2592 x 1944 pixels	2503 KB	1395 KB	695 KB
M2 2048 x 1536 pixels	1602 KB	893 KB	445 KB
M3 1600 x 1200 pixels	1002 KB	558 KB	278 KB
S 640 x 480 pixels	249 KB	150 KB	84 KB
1600 x 1200 pixels	—	558 KB	—
W 3264 x 1832 pixels	2601 KB	1540 KB	736 KB

- Economy
- Normal
- Fine
- Fine

Good

Better

Best

MENU Setting the Image-Recording Quality

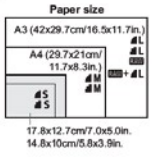
Set the recording quality to suit the intended image size for printing, etc. Note that the recording quality will also affect the number of shots the CF card can record. Select the recording quality while thinking about the capacity of the CF card to be used. Also see "Guide to Image-recording Quality Settings" below and "FAQ" on the next page.

Select the image-recording quality.

- Under the [1] tab, select [**Quality**] and press <SET>. Set it to the desired recording quality such as [L], then press <SET>.
- ▶ [**Quality**] will be displayed.
- The figures (**** x ****) displayed on the upper right is the actual pixel count (horizontal x vertical) for the respective quality setting.

Guide to Image-recording Quality Settings

Quality		Pixels	Possible Shots
L	High quality	Approx. 10.1 million	128
L			248
M	Medium quality	Approx. 5.3 million	215
M			409
S	Low quality	Approx. 2.5 million	374
S			708
RAW	High quality	Approx. 10.1 million	48
RAW+L			26



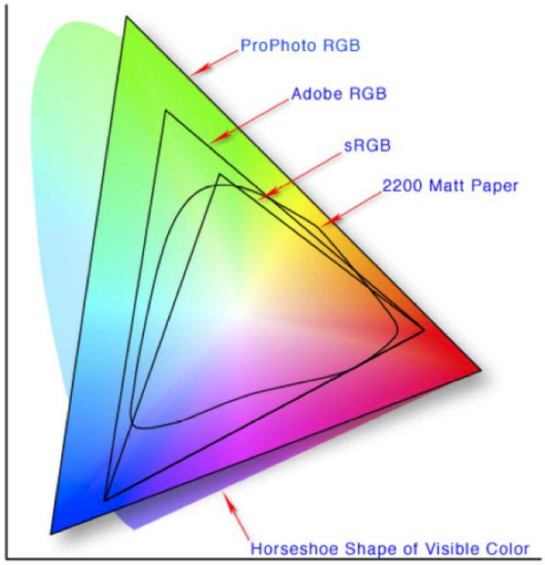
* Applies to a 512MB CF card.
* Except for the RAW mode, the JPEG is used to record the image in all the recording-quality modes.

White Balance

- Auto
- Daylight
- Cloudy
- Shade
- Flourescent
- Tungsten

• Tungsten

- sRGB
- Colormatch RGB
- Adobe 1998 RGB
- ProPhoto RGB



MENU Setting the Color Space ★

The color space refers to the range of reproducible colors. With this camera, you can set the color space for captured images to sRGB or Adobe RGB. For normal images, sRGB is recommended. In the Basic Zone modes, sRGB is set automatically.

1 Select [Color space].

- Under the [📷2] tab, select [**Color space**], then press <SET>.

2 Set the desired color space.

- Select [**sRGB**] or [**Adobe RGB**], then press <SET>.

About Adobe RGB

This is mainly used for commercial printing and other industrial uses. This setting is not recommended if you do not know about image processing, Adobe RGB, and Design rule for Camera File System 2.0 (Exif 2.21).
Since the image will look very subdued with an sRGB personal computer environment and printers not compatible with Design rule for Camera File System 2.0 (Exif 2.21), post-processing of the image with software will be required.

The More Pixels the better

Image Size: Large (best quality)

Compression:Least=highest Quality

ColorSpace: Adobe RGB 1998

Good Composition

A pleasing arrangement of objects, mass, lines and contrasts of colors to form a harmonious whole

What makes a good photograph?

You Be the Judge

3 Essentials of a good photograph

- Good Technical Quality
- Interest or Impact
- Good Composition

Good Technical Quality

- No camera movement
  -Correct body position
- Correct focus
  -Person's eyes
  -Selective/depth of field
- Lighting
  -Front, back, side
- Exposure

Interest or Impact

- Tell a story
- Express a mood
- Make a pattern

Good Composition

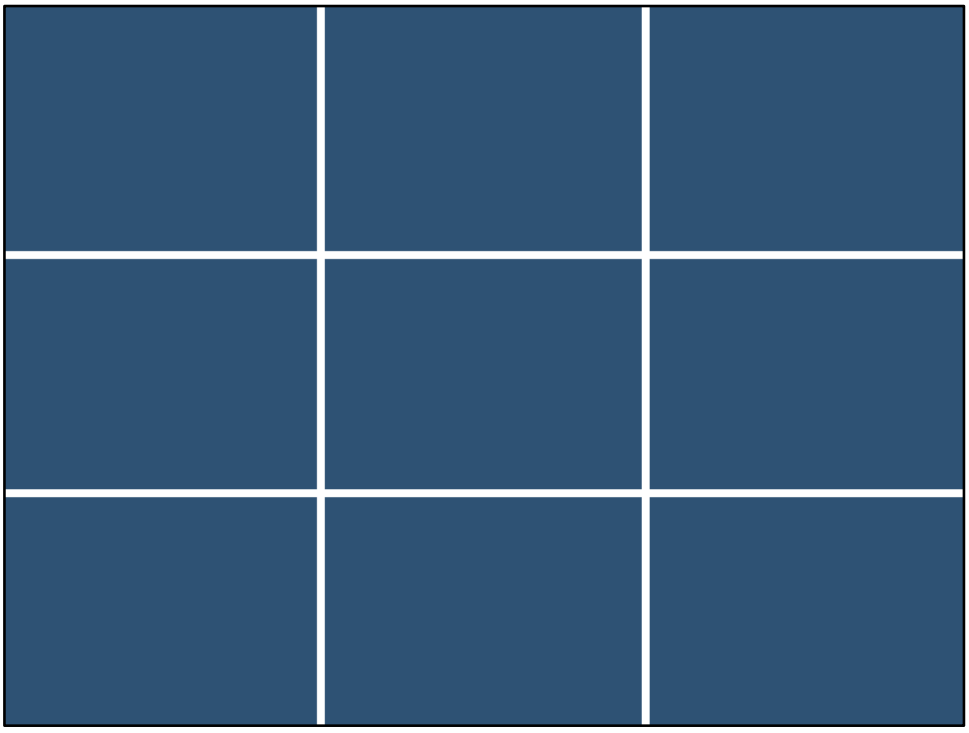
- Get loser

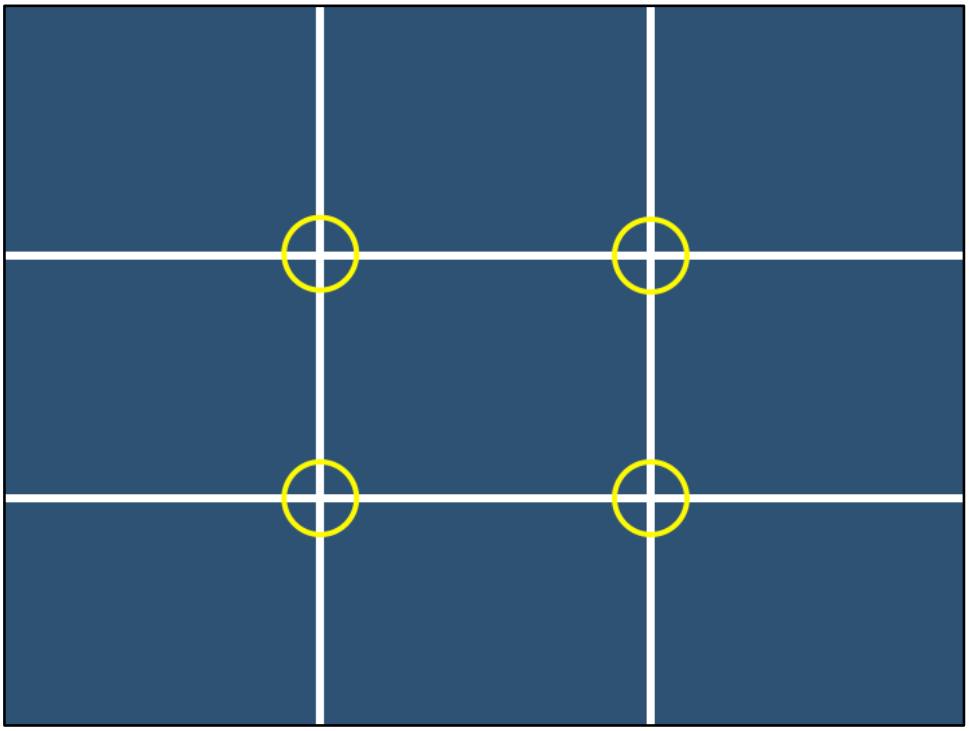
S C U F I

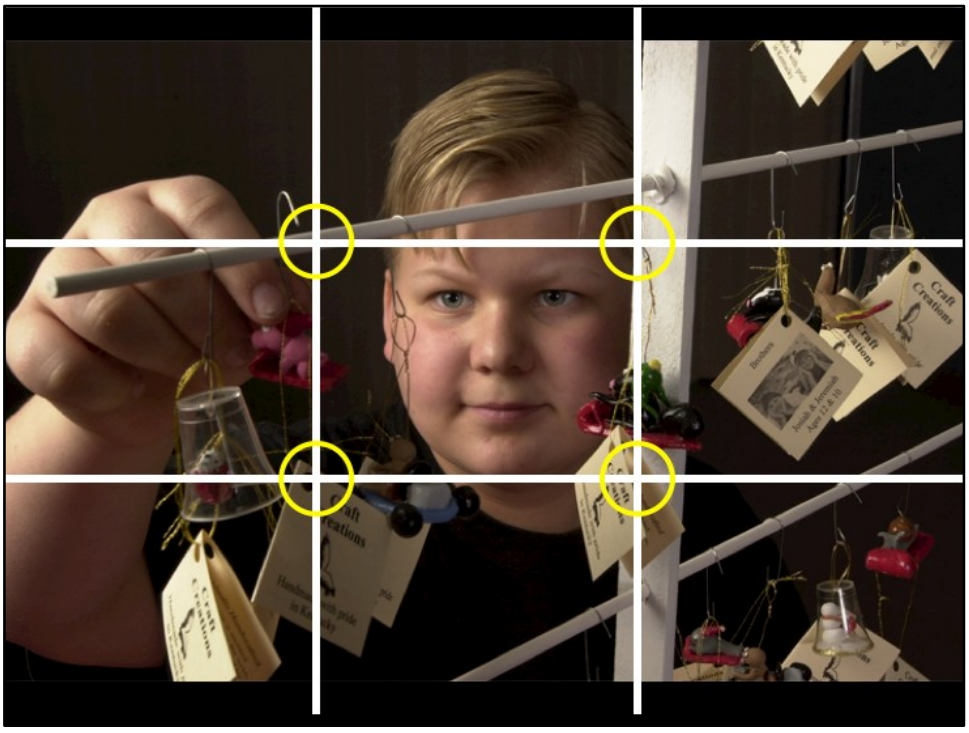
Shoot
Close
Up
For
Impact

Good Composition

- Get loser
- R .le ct Th' '






Craft Creations
Craft Creations
Craft Creations

- Get closer
- Rule of Thirds
- Vantage point

Good Composition

- Get loser
- R .le ct Th' '
- Vant ' -
- Framing movement

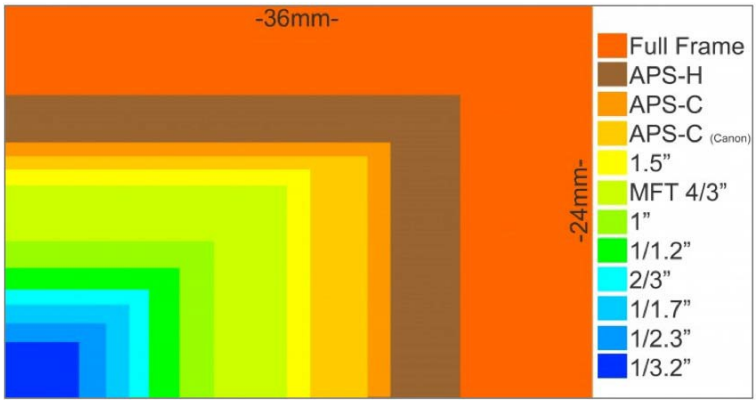
Keys to Success

- Keep it simple
- Try vertical & horizontal
- Place subject off-center
- Try unusual points of view

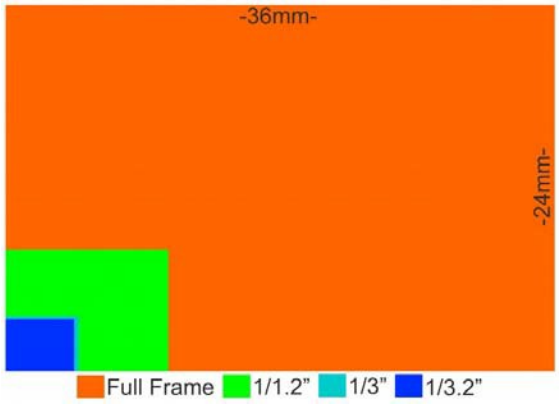
iPhotography

Capturing, storing, processing, and distributing photos on iDevices

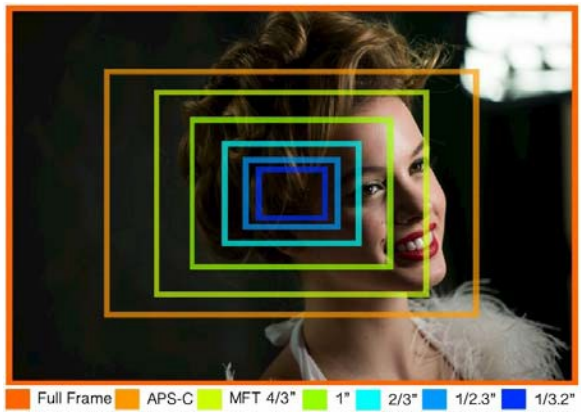
Different sensor sizes from Full Frame to 1/3.2-inch compared with each other



The sensor sizes usually used in smartphones are 1/3.2-inch or 1/3-inch, though the Nokia 808 used a 1/1.2-inch one



What different-sized sensors – Full Frame, APS-C, MFT, 1-inch, 2/3-inch, 1/2.3-inch, 1/3.2-inch – would have captured if using the same lens to take this photo



http://www.gizmag.com/camera-sensor-size-guide/26684/

Understanding Pixels

Typical Sensor	Resolution (WxH)	Print Size & Quality		
		Excellent @ 300dpi	Good @ 200dpi	Poor @ 150dpi
3 MP	2048 x 1536	7" x 5"	10" x 8"	14" x 11"
4 MP	2464 x 1632	8" x 6"	12" x 8"	16" x 12"
6 MP	3008 x 2000	10" x 8"	15" x 10"	19" x 13 "
8 MP	3264 x 2448	12" x 8"	16" x 12"	22" x 16"
10 MP	3872 x 2592	13" x 9"	19" x 13"	26" x 17"
12 MP	4290 x 2800	15" x 10"	21" x 14"	28" x 18"
16 MP	4920 x 3264	17" x 11"	24" x 16"	32" x 22"
35mm Film (Scanned)	5380 x 3620	18" x 12"	27" x 18"	36" x 24"
36 MP	7360 x 4912	24" x 16"	36" x 24"	48" x 32"

WWW.DIGITALPHOTOGRAPHYLIVE.COM

Front Camera Trouble

Model	Front Camera	Rear Camera
iPhone 5s/5c	1280 x 960	3264 x 2448 8mp
iPhone 4s	640 x 480	3264 x 2448 8mp
iPhone 4	640 x 480	2592 x 1944 5mp
iPad 4	1280 x 960	2592 x 1944 5mp
iPad 3	640 x 480	2592 x 1944 5mp
iPad mini	1280 x 960	2592 x 1944 5mp
iPad mini 2	1280 x 960	2592 x 1944 5mp
iPad 2	640 x 480	1280 x 720 1mp

Social Numbers

	Facebook	Twitter	Instagram	Flickr	Dropbox
Max Photo Size	2048 x 2048px	1024 x 2048px	2048 x 2048px	200 MB	150 MB
Max Photos	1000 per album	100 shown	unlimited	1 Terabyte	2 GB
Max Print Size	4x6 – 8x10	4x6 – 8x10	6x6	unlimited	unlimited
Need account to view?	YES	NO	YES	NO	YES

How To Grab Still Images From Video

Presented
by

David Keto
Media Producer/Director
University of Wyoming

How to grab still images from video

Freeze Frame Rules of Thumb

- Pick a frame with limited to no motion


- Pick a frame where your talent looks good


Freeze Frame Rules of Thumb

- Freeze frame is usually 72 DPI, so use it for web and smaller photos in print


U.S. Representative Cynthia Lummis

'I CAN'T EVEN DESCRIBE ACCURATELY AND ADEQUATELY HOW MUCH 4-H INFLUENCED ME IN MY LIFE'

To see the video, go to http://bit.ly/lummis4-h

If not for Head, Heart, Hands, and Health nudging during childhood, U.S. Representative Cynthia Lummis in all likelihood would not have been at the 100th anniversary kickoff ceremony for the University of Wyoming Extension and

and then I advanced through the 4-H speech programs," she recalled. "That was where I learned to get over my fear and to visit with people and to stand in front of other people in a speaking role. That really has been what shaped my life and

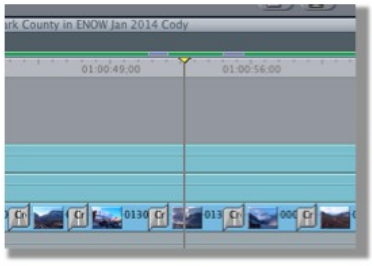
Lummis would go on to be a member of the Wyoming Legislature, a state treasurer, and then be elected to the House of Representatives, where she is on committees that set the budgets for the U.S. Forest Service and the USDA.

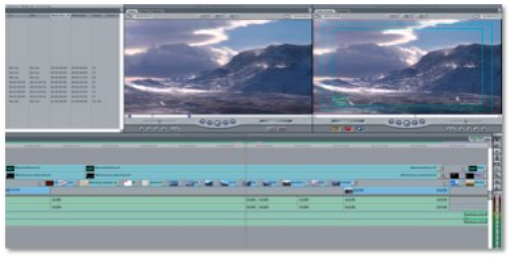
How to Create a Freeze Frame

- Depends on software available
- JPEG is the most common output

How to Create a Freeze Frame

- In any program position the "playhead" on the frame you would like to grab a still from, be sure the video is paused





- Usually you can use the arrows to toggle back and forth to find the exact frame you would like

How to Create a Freeze Frame

- **Windows Media Player**
  - Control+!
- **Windows Movie Maker**
  - Tools
  - Take picture from preview
- **iMovie (not easy in latest versions)**
  - Put single frame you want to freeze in a new sequence
  - Export to quicktime
  - Movie to image sequence

How to Create a Freeze Frame

- **Final Cut Pro 7**
  - Export>using quicktime conversion
  - Format>still image
- **Final Cut X**
  - File>Share>Save Current Frame
  - *requires enabling "save current frame" in the "destination" options first

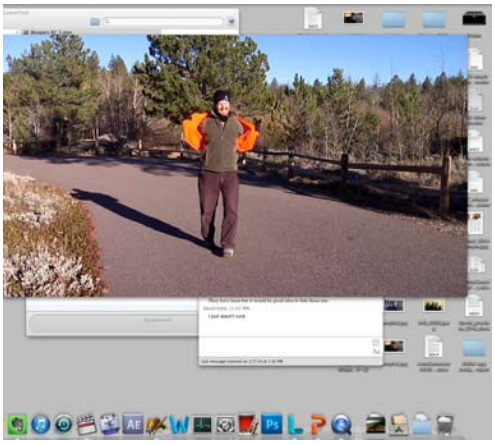
How to Create a Freeze Frame

- **Adobe Premier**
  - Click "export frame" button
  - *requires enabling "export frame" button first
- **Adobe Premier Elements**
  - Action bar: tools>freeze frame
  - Click export

How to Create a Freeze Frame

- **Quicktime (windows)**
  - Export>movie to picture or
  - File>print>PDF
- **iPad/iPhone**
  - Home+Power
  - Various apps for screen shooting

How to Create a Freeze Frame



- **Windows Screen Shot**
  - Windows+print screen (full screen}
  - Alt+print screen (selected window}
- **Mac Screen Shot**
  - Command+shift+3 (full screen}
  - Command+shift+4 (selected area}

Essential Graphic Design Concepts

Presented by

Ana Henke
Publications Supervisor and Graphic Designer
New Mexico State University

Essential Graphic Design Concepts

Resolution

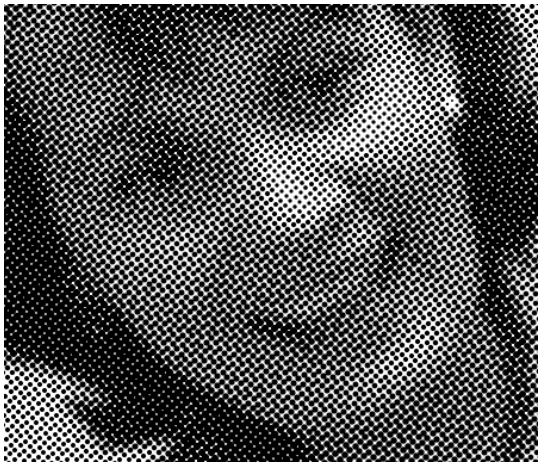
- The amount of information or pixels contained in an image.

- Resolution is measured in DPI (**dots per inch)** or PPI (**pixels per inch**). These are literally the number of dots or pixels that can be placed side by side in a line one inch long. The more dots or pixels, the better the clarity – the higher the resolution – of the image.

Essential Graphic Design Concepts

Dots Per Inch (DPI)

The image on the right shows you the actual DOTS that are used to print a photograph on a printing press.



Essential Graphic Design Concepts

Resolution: Why is it SO important for printing?

high resolution

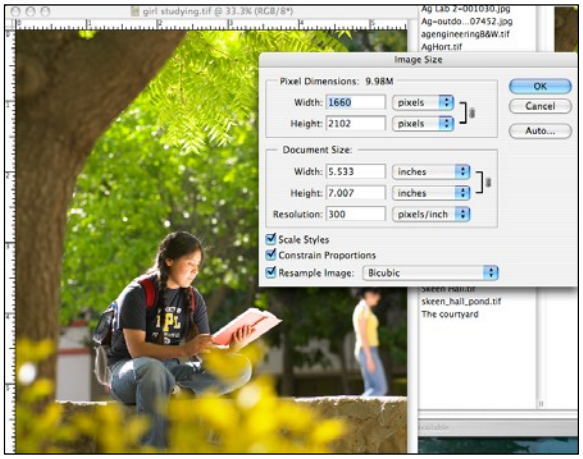
low resolution

Essential Graphic Design Concepts

Resolution: How do you know when an image has high resolution?

Tip 1:

Photoshop, a photo editing software, allows you to open the image file and look up the resolution. It should be 300 dpi or higher.



Essential Graphic Design Concepts

Resolution: What if you don't have Photoshop?

Tip 2: Image is probably low resolution:

- if the placed or inserted image is SO small you have to enlarge it.
- if the image's file size is smaller than 500KB (kilobyte).

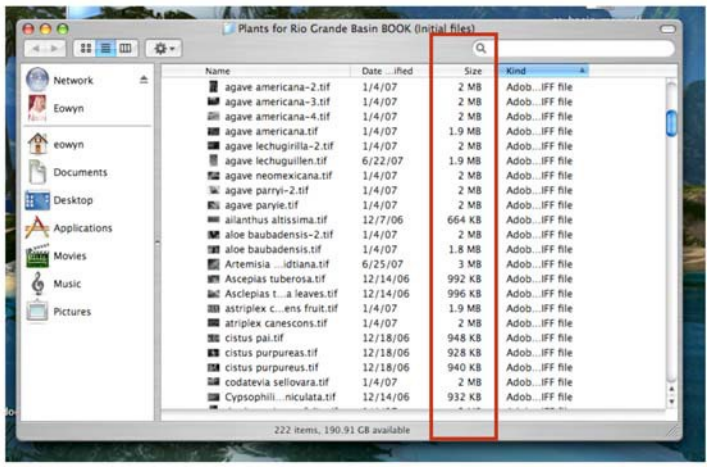
Tip 3: Image is probably high resolution:

- if the placed or inserted image fills the page
- if image is at least 1MB (megabyte)

Tip 4: PC users can right-click an image then choose "properties" to see resolution.

Essential Graphic Design Concepts

Resolution: Where can you find file size?



Essential Graphic Design Concepts

Understanding Image formats

- **Raster images** (TIFF, JPEG, GIF, PNG, PICT, BMP): These types of images are composed of pixels and are dependant on resolution for clarity (photos, line art, etc.)



- **Vector images** (EPS): These types are images are not dependant on resolution and can be enlarged without distortion.

Essential Graphic Design Concepts

Vector Image

Vector image with anchor points

This example shows you how you can modify a vector file by extending some of the anchor points.

Essential Graphic Design Concepts

Good sources of image files

- **Digital camera images** set at the highest resolution setting.
- **Slides or photos** that you can scan yourself. (**Tip:** Scan at 300 dpi and scale [enlarge] images to final desired size during scanning stage.)
- **Downloadable high resolution images.** (Always remember to look into copyright permission when using photos produced by a third party.)

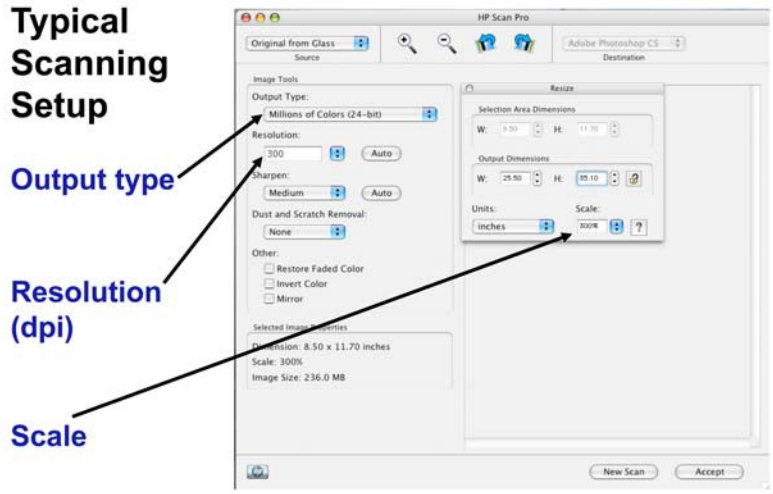
Essential Graphic Design Concepts

Scanning tips

- When scanning line art or text, set your scanner to black/white, **NOT** grayscale. Image will print much more clearly.

- Scan photos/slides at 300 dpi and line art at 900 dpi.
- **Scale (enlarge) your images at this stage.**
  Ex: If you have to scan a slide, scale (enlarge) it up to 300%. That will enlarge the image to 3 times its original size at 300dpi so it will be **BOTH clear and larger**.

Essential Graphic Design Concepts



Essential Graphic Design Concepts

Downloadable high resolution images.

Bugwood.org

Essential Graphic Design Concepts

Bad sources of image files for print

- **Screen captures**
  Images on the Web are usually only 72 dpi.
  (Find out about copyright before using any online image, and be careful to not use images with watermarks.)

- **Cut or copied and pasted images**
  I do NOT recommend copying a pasting images from one software into another! The image quality will degrade every time this is done and the resolution is usually low.

Essential Graphic Design Concepts

What if the only photo you have is within a MS Word document?

I do NOT recommended copying/pasting images; however, if the clarity of the image looks good **(by that I mean NO pixels)** and the image is the only thing on the page, you can make a PDF of the page and insert the PDF into your document as a graphic. You can also print the image, scan it at 300 dpi and insert into your document as an image.

The quality won't be as good as an original, high resolution image, but it may be adequate.

Essential Graphic Design Concepts

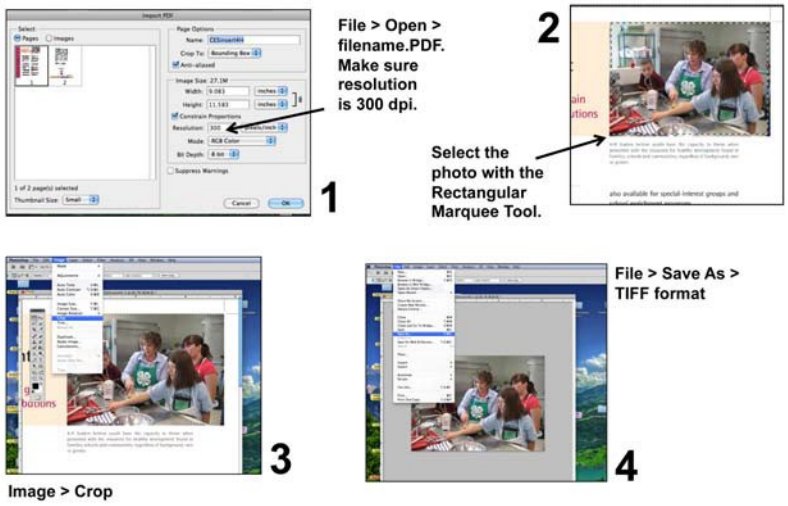
What if the only photo you have is within a PDF document?

If you have Photoshop, you can open the PDF, crop out the image and save the file as TIFF image. If you don't have this software, you can print the page, scan it at 300 dpi and insert into your document as an image.

The quality won't be as good as an original, high resolution image, but it may be adequate.

Essential Graphic Design Concepts

How to convert a PDF into a graphic file using Photoshop.



Essential Graphic Design Concepts

What image formats are best to use for print?

- **TIFF format** is preferred by the print industry for photos, etc.
  - If your project is going to be printed on a printing press all images need to converted to CMYK mode.

- **EPS, AI format** is preferred for illustrations.

Essential Graphic Design Concepts

What is CMYK and what is RGB?

The **CMYK color model** stands for **C**yan, **M**agenta, **Y**ellow and blac**K**. When a color photo is printed it is literally separated into these four colors and printed one color at a time. These four colors then combine to give you the full color image.

When a photograph is going to be reproduced on a traditional printing press or on today's digital presses or color printers, photos should be converted to CMYK format prior to reproduction to ensure color accuracy.

The **RGB color model** stands for **R**ed**, G**reen **and B**lue. Files in **RGB** format are intended for use on electronic systems like TVs, mobile phone displays and computer monitors.

You've probably noticed that the colors of photos on different electronic devices often look different—that is because each device reads the color breakdowns differently. You don't want this type of inconsistency in print.

Essential Graphic Design Concepts

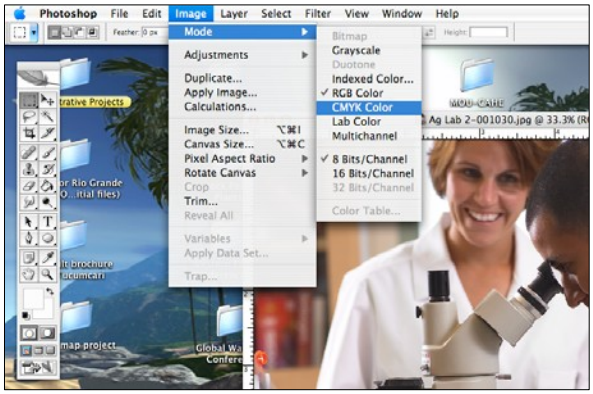
How do I change a file from RGB to CMYK to prepare file for printing?

The only way to change a file from RGB to CMYK format is to use Photoshop.

You would go to Image > Mode > CMYK Color.

Also, remember to to save the file in TIFF format.

If you don't have this software, pre-press staff at your print shop will need to make the change for you.



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Questions and Answers

Thank you for participating in today's webinar!
We hope you've found it useful.