



# Photoshop® CC

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## Helpful Web Links

AdobeTV

[tv.adobe.com](http://tv.adobe.com)

*Thousands of free videos covering new features, introductory topics & workflow in the Creative Cloud*

Adobe Forums

[forums.adobe.com](http://forums.adobe.com)

*Get feedback from Adobe staffers, vote on new features or changes you'd like to see in an application.*

Creative Cloud Lovers

<http://creativecloudlovers.com>

*Kelly's Adobe® User Group*

## Kelly McCathran | Social Media

Facebook

[facebook.com/creativecloudlover](https://facebook.com/creativecloudlover)

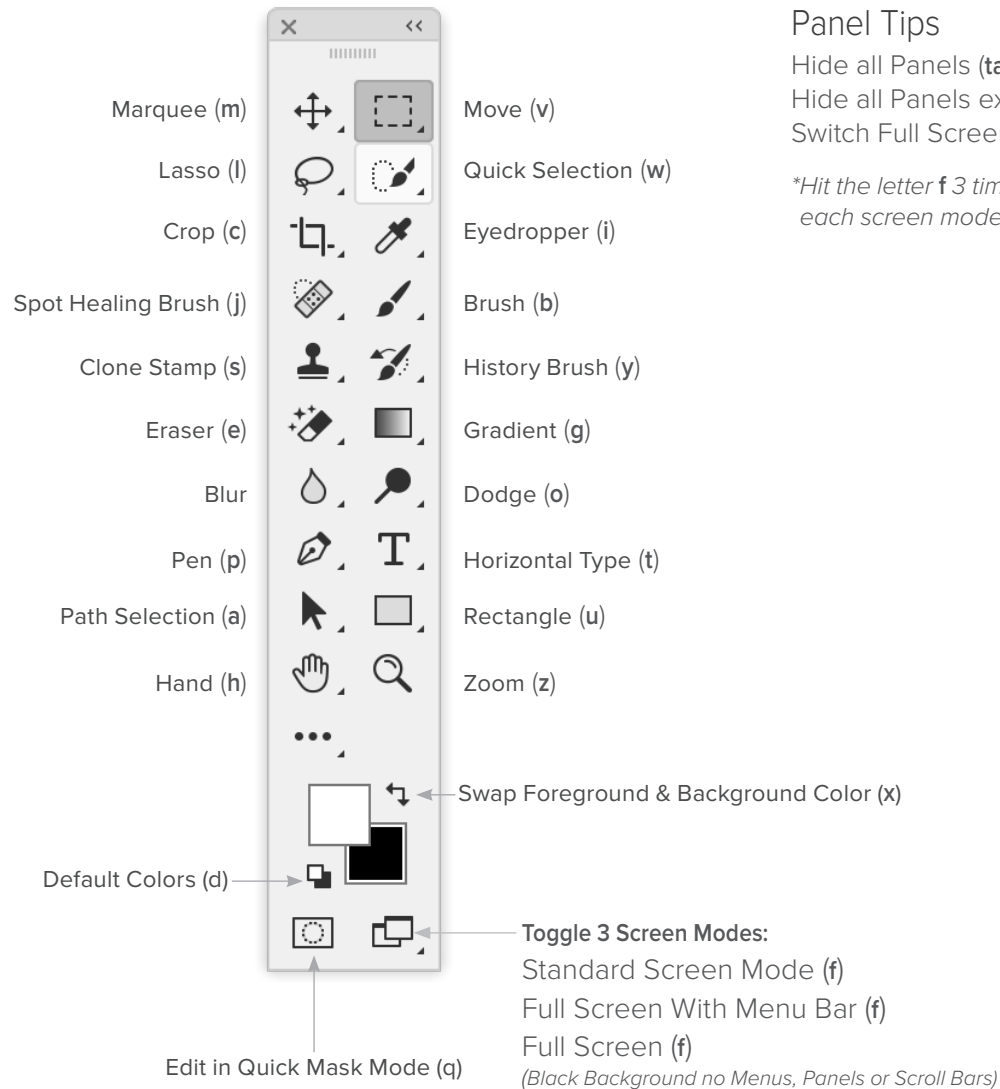
Twitter

[twitter.com/onlineinstruct](https://twitter.com/onlineinstruct)

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San Francisco, CA

\* Personal friends of Kelly can ask for a re-print discount.

# Photoshop Tools Panel



## Panel Tips

Hide all Panels (**tab**)

Hide all Panels except toolbar (**shift tab**)

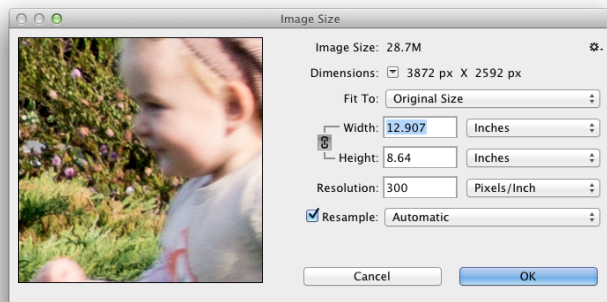
Switch Full Screen Mode (**f**)\*

*\*Hit the letter **f** 3 times to toggle between each screen mode*

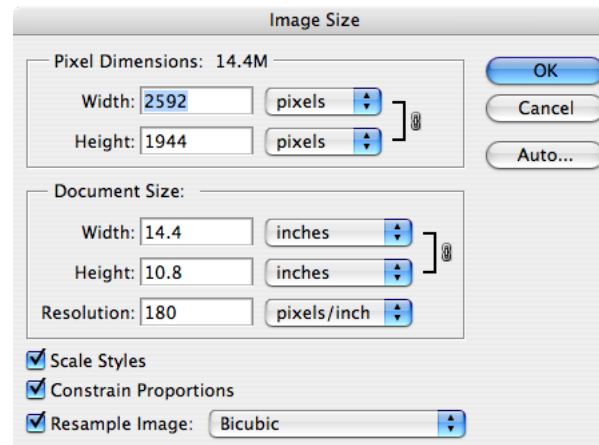
## Image Size & Resolution

To see the width, height, resolution (*in pixels, inches and more*) choose **Image > Image Size**. The keyboard shortcut for **Image Size** is **Command Option I** or **Ctrl Alt I**.

### New Dialog



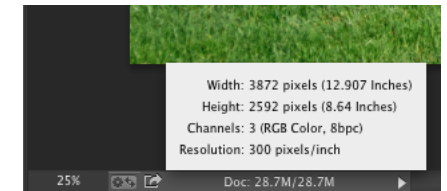
### Old Dialog



### Size & Resolution Trick

A trick for seeing the Image Size (*without opening a dialog*) is:

Click on the file size display in the lower left corner of the application window, where you see  
Doc: 28.7M/28.7M



### Ideal Resolution Guide\*

A lot of people are told to use **300 ppi** (pixels per inch) as a standard for “*high resolution*” images, but few people are told why. Truth be told, 300 ppi is often overkill for many tasks (especially web/mobile images, even for retina or HD displays). Here is a general guide for resolution; based on where the image will be used.

Web/Device (may be 2x higher for retina or HD displays) = 72 ppi

Laser/Inkjet (office quality printing) = 150 – 225 ppi

Press Quality (you are making plates) = 300 ppi

\* Check with your print shop if you are creating “press ready” images, the standard rule is:  
 $2 \times \text{your lpi (lines per inch)} = \text{best ppi}$ .

# Options Bar

The **Options bar** is the context-sensitive bar along the top of your screen that shows options for the currently selected tool. Each tool you select will reflect different options here.



—This area is gone in Photoshop CC. To tile documents, you have to go to **Window > Arrange > 2-up** (or chose a Tiling option).

## Zoom Shortcuts

- Zoom In..... **Command +** or **Ctrl +**
- Zoom Out..... **Command -** or **Ctrl -**
- Zoom In with Mouse..... **Option** or **Alt** and Slide **Mouse Wheel Up**
- Zoom Out with Mouse..... **Option** or **Alt** and Slide **Mouse Wheel Down**
- 100% ..... **Command 1** or **Ctrl 1**
- ..... Double-click the Zoom tool
- Fit in Window ..... **Command 0** or **Ctrl 0**
- ..... Double-click the Hand tool
- Temporary Zoom tool (*to marquee zoom or scrubby zoom*) ..... **Command Spacebar** or **Ctrl Spacebar**
- Temporary Hand tool ..... **Spacebar**

## General Shortcuts

- Cancel in any dialog ..... **esc**
- Jump to next field ..... **tab**
- Jump to previous field ..... **shift tab**

## Nested Tool Switching

To switch to nested tools without using your mouse, hold down the **shift key** and press the letter for the tool (shown in parentheses as you mouse over the tool).

### Example:

Press **m** on your keyboard for the Rectangular Marquee tool, then press **shift m** to switch to the Elliptical Marquee tool. Pressing **shift m** again will go back to the Rectangular Marquee tool.

## File Shortcuts

New .....	Command <b>N</b> or <b>Ctrl N</b>
Open .....	Command <b>O</b> or <b>Ctrl O</b>
Close .....	Command <b>W</b> or <b>Ctrl W</b>
Save .....	Command <b>S</b> or <b>Ctrl S</b>
Save As .....	Command Shift <b>S</b> or <b>Ctrl Shift S</b>
Print .....	Command <b>P</b> or <b>Ctrl P</b>
Quit / Exit .....	Command <b>Q</b> or <b>Ctrl Q</b>

## Edit Shortcuts

Undo (once) .....	Command <b>Z</b> or <b>Ctrl Z</b>
Cut .....	Command <b>X</b> or <b>Ctrl X</b>
Copy .....	Command <b>C</b> or <b>Ctrl C</b>
Paste .....	Command <b>V</b> or <b>Ctrl V</b>

## Multiple Undo and Redo Shortcuts

Step Backward ( <i>undo more than once</i> ) .....	Command Option <b>Z</b> or <b>Ctrl Alt Z</b>
Step Forward ( <i>redo more than once</i> ) .....	Command Shift <b>Z</b> or <b>Ctrl Shift Z</b>

## Tools Panel Shortcuts

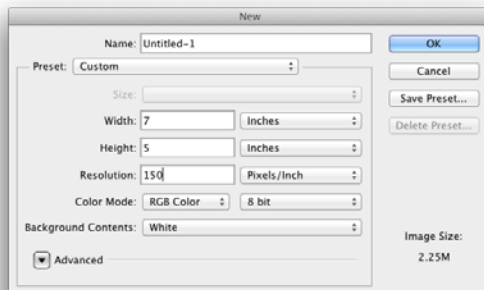
Hide all Panels .....	<b>tab</b>
Hide Panels on the right .....	<b>shift tab</b>
Default Foreground and Background (black and white) .....	<b>d</b>
Switch Foreground and Background colors .....	<b>x</b>

## Brush Shortcuts

Brush Smaller .....	<b>[</b>
Brush Bigger .....	<b>]</b>
Brush Edge Softer ( <i>in 25% increments</i> ) .....	<b>shift [</b>
Brush Edge Harder ( <i>in 25% increments</i> ) .....	<b>shift ]</b>

## Creating a New Document

In the past it was rare that people would choose **File > New** in Photoshop. Today, many people are building web, mobile or device mock-ups in Photoshop, so this has become a more common task.

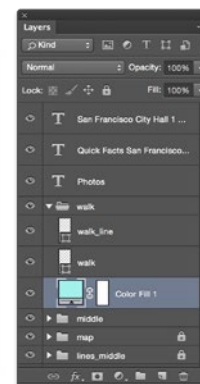
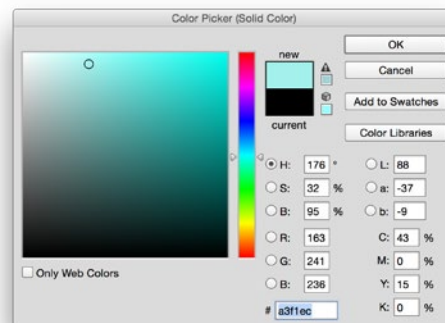
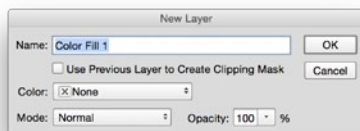


In the new document window you can choose your units **pixels** for web & mobile or **inches** for print. You can also select your color space, these are the 3 primary:

- Grayscale
- RGB
- CMYK

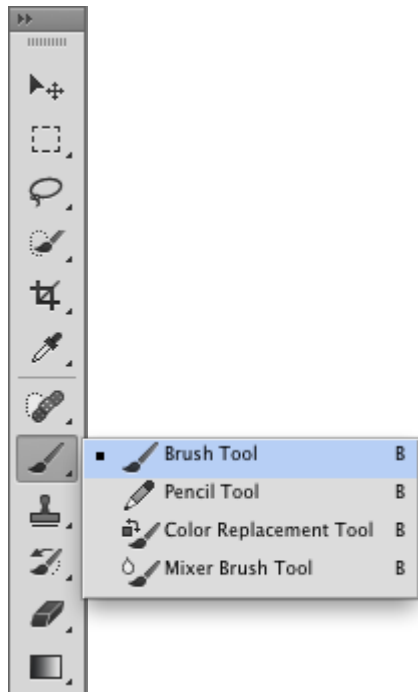
## New Fill Layer

To fill with a solid color, choose **Layer > New Fill Layer > Solid Color** (be sure you don't go to **Layer > New, New Fill Layer** is lower in the menu). Click in the **larger square** to choose the desired **tone**. Click on the **rainbow bar** to the right of the **large square** to choose the **hue** (or parent color).

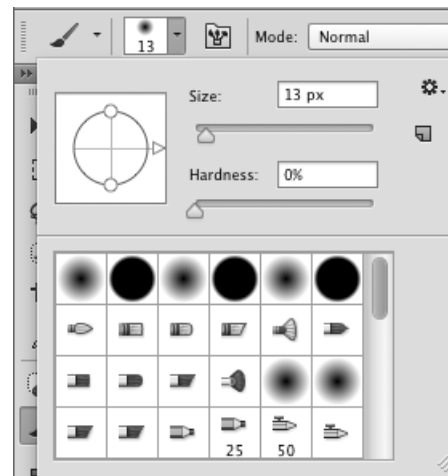


## Brushes

Let's start in Photoshop by experimenting with Brushes. Hit the letter “b” on your keyboard to switch to the **Paintbrush tool**, or click once on the Paintbrush tool. *(Single letters in Photoshop do change tools.)*



To change your style of brush *(or size)* click on the **Options bar** at the top of the screen, the down arrow to the right of the default: 13 Soft Round Brush preview. That will open the **Brush Preset picker**.



You can also use these keys to make your brush bigger or smaller:

[ - Brush Smaller  
] - Brush Bigger

Shift ] - Brush Harder  
Shift [ - Brush Softer



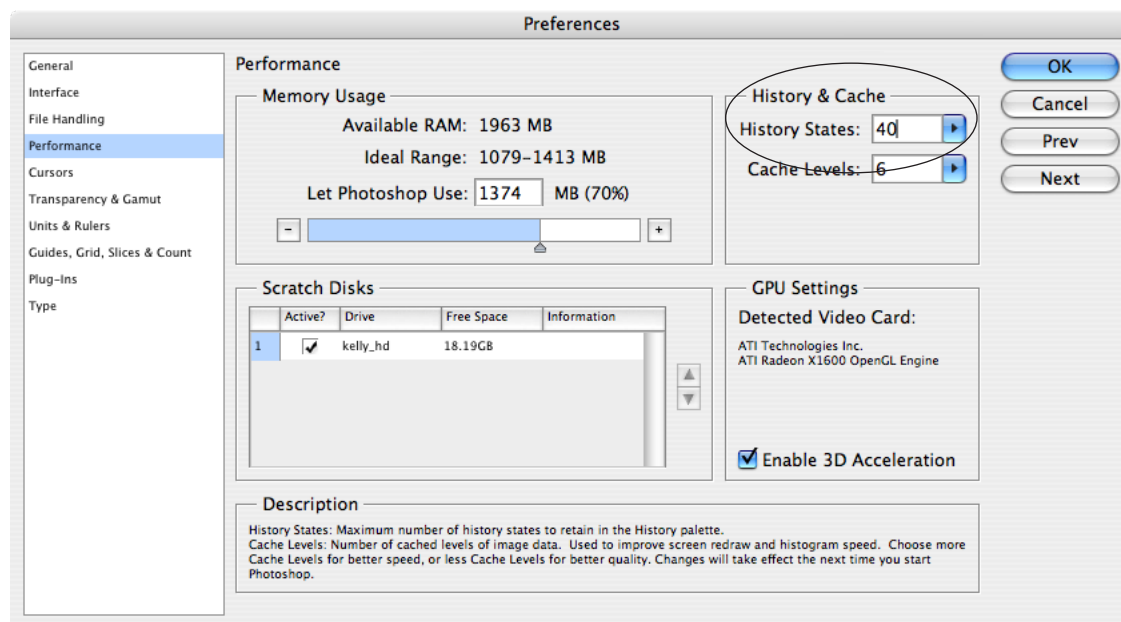
## Preferences Undo

Photoshop has up to **1,000 undos**, the default setting is 20. To increase the number of Undos go to **Photoshop > Preferences > Performance (Mac)** **Edit > Preferences > Performance (Windows)**. In your Preferences, History States are where you set your number of undos. The recommendation is 40 - 50, the more RAM you have the higher you can go (*unless you have over 6 GigaBytes of RAM, don't go above 100.*)

## Multiple Undo & Redo Shortcuts

**Edit > Step Backward** is your multiple undo menu command. **Edit > Step Forward** is your multiple redo command. These commands also this move up and down the History Panel.

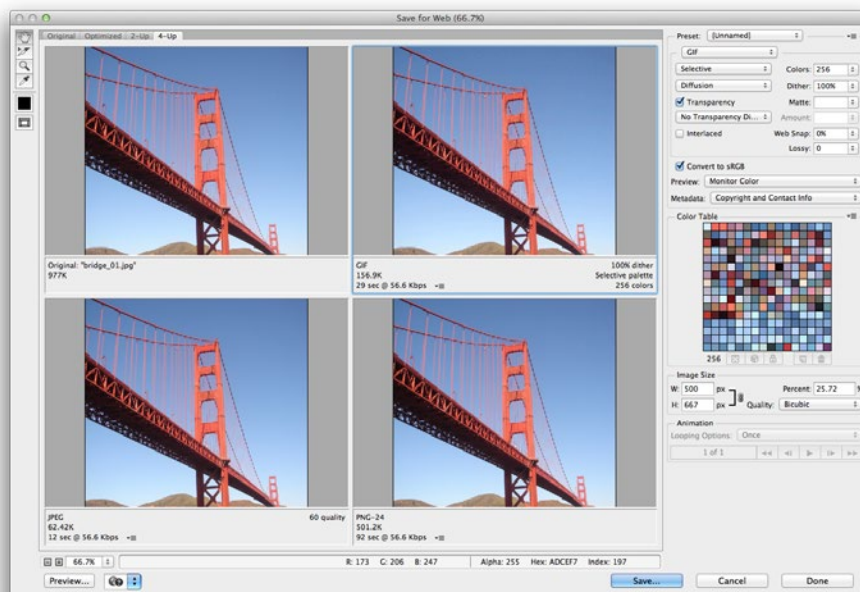
**Step Backward** (undo more than once) ..... **Command Option Z or Ctrl Alt Z**  
**Step Forward** (redo more than once) ..... **Command Shift Z or Ctrl Shift Z**



## Save For Web

You use the Save For Web dialog (**File > Save For Web...**) to select optimization options and preview optimized artwork. In Photoshop CC 2015 this is located under **File > Export > Save for Web (Legacy)**. Typically 4-up is the best option for testing your file output and size.

- **Original** = Displays the image with no optimization
- **Optimized** = Displays image with the current optimization settings applied
- **2-Up** = Displays two versions of the image side by side
- **4-Up** = Displays four versions of the image side by side



## Photoshop CC 2015 Web Images

In Photoshop CC 2015, you can now do Quick Exports of your most common web formats by right-clicking the Layer name and choosing > Quick Export as PNG. The preferred format can be set under **File > Export > Export Preferences...**

# Adobe Bridge

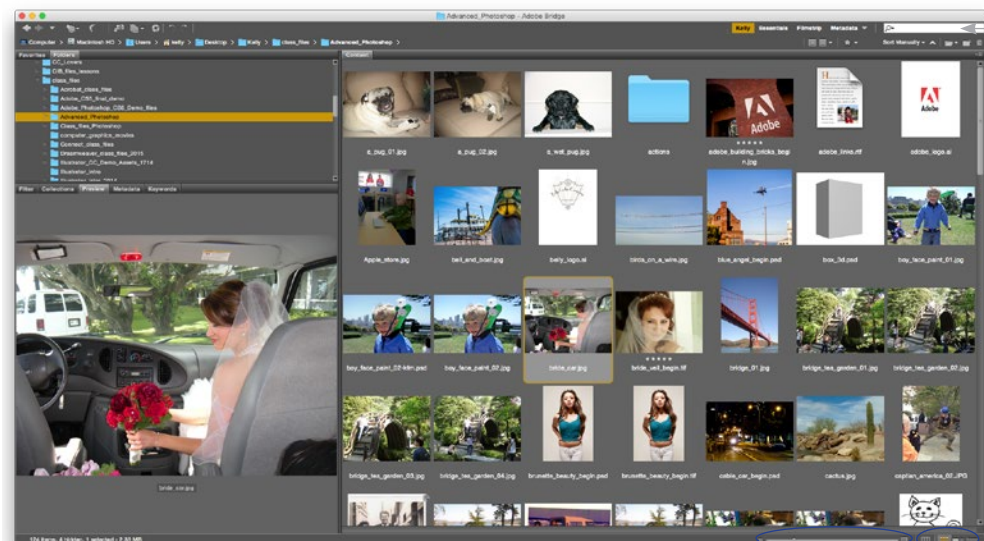
**Adobe Bridge** acts as a **central launchpad** for all Creative Cloud files (*and many other file types*). Bridge also aides in many automation tasks from Photoshop including: Batch rename, Convert to different file formats, batch processing of Camera Raw & jpeg files, building seamless panoramic images and much more.

Using bridge you can browse, organize, label, and preview Photoshop, Illustrator, PDF and InDesign (*CS3 and newer*) documents, templates, and **snippets**. However; you are not limited to Adobe files, bridge can be used to globally **batch rename** or organize **virtually any file type** (*although you may not have a preview for all file types*). The **Preview** section can be scaled to give a larger, more detailed view of the image. In the lower right corner of the Bridge window you can select several different preview types.

If you would like to launch Adobe Bridge from any Creative Cloud program, choose **File > Browse in Bridge** (**Command Option O** or **Ctrl Alt O**).

*Tip: To select non-consecutive items, hold down the **Command** key on the Mac or **Ctrl** on Windows. The **Shift** key will select rows, or consecutive items.*

## Kelly's Preferred Bridge Workspace

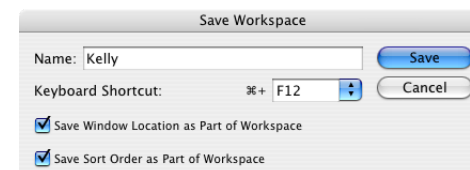
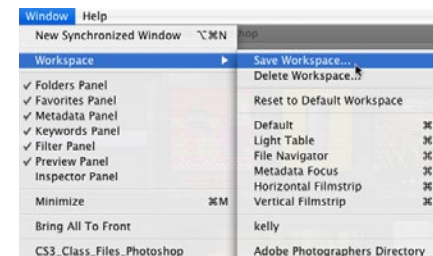


Thumbnail Size

Optional Views

## Savable Workspaces

Once you have all your panels organized, it helps to save a workspace to keep their position. **Window > Workspace > Save Workspace.**



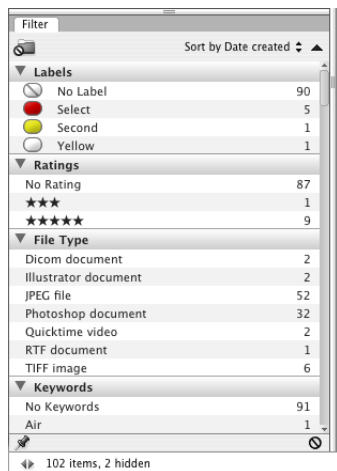
## Preview Panel & Loupe Tool

Bridge CS3 has added a **Loupe tool** to the Preview window. To use the Loupe, simply click on the image in the Preview window anywhere. To **zoom in**, use your **scroll wheel** on your mouse or the + on your keyboard **zoom out** hit the – key. To make the Loupe tool go away, click anywhere in the Loupe window, in CS4 they added a small X at the lower right corner to close the loupe window.



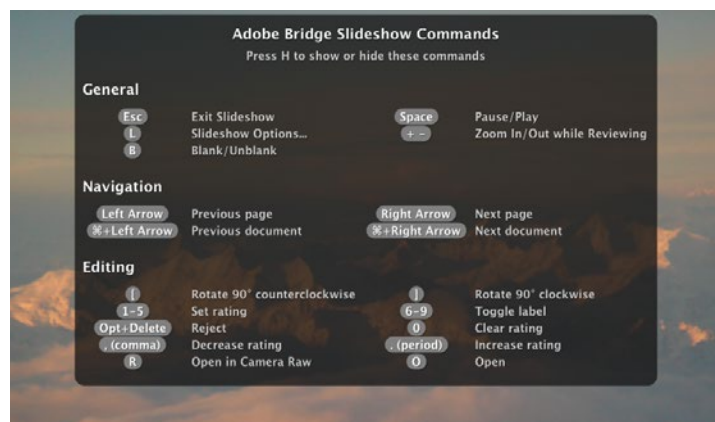
## Filter Panel

This is a wonderful tool added to Bridge CS3, the **Filter panel** allows you to control which files you see in the **Content panel** by checking or un-checking items to display.



## Full Screen Slideshow

One of my favorite features to review a folder full of images is **View > Slideshow** (**Command L** or **Ctrl L**).



**Shortcuts:** **H** will hide or show the menu

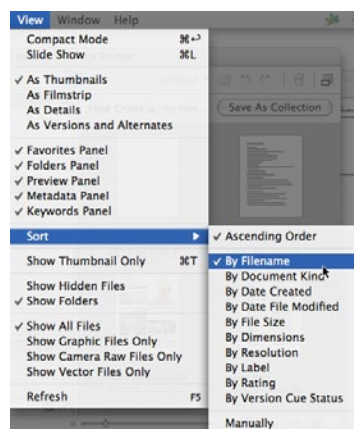
**Spacebar key** pause or play the slideshow

**Esc key** will exit the show

The number **1–5** will rate an image

## Optional Views | Sort by Rating

Bridge offers many different sort and view options, found under **View > Sort**. If you drag images to a new spot in Thumbnail view, the sort order may change to Manually. To correct it to **By Filename**, go back to **View > Sort**.



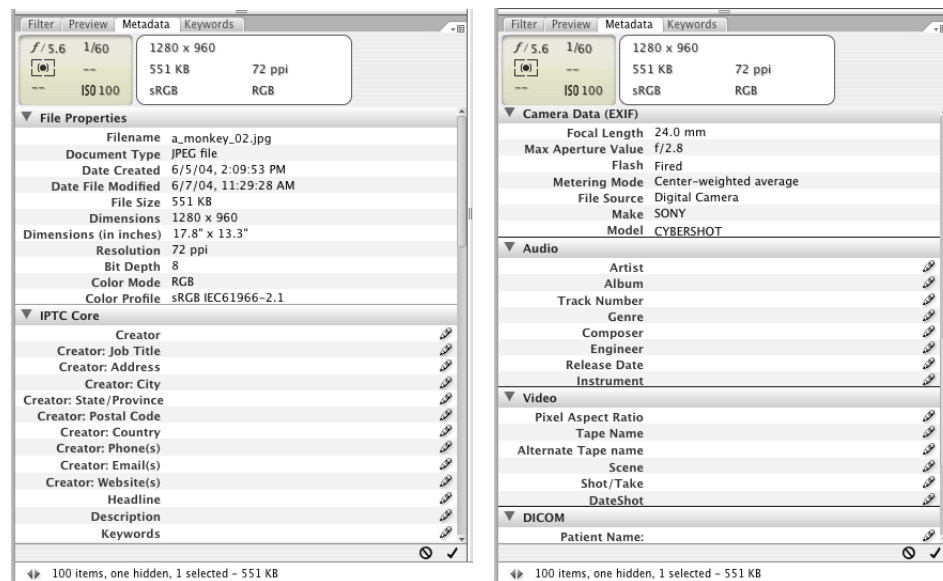
## Metadata & Copyright

**Metadata** (located in the lower left hand corner of the Bridge window) is information about the image such as: creation date, width, height, resolution, copyright info, etc.

Bridge even displays **Camera** specific **EXIF** (Exchangable Image File Format) information like: did the flash fire, what was the aperture value, date, time, etc.

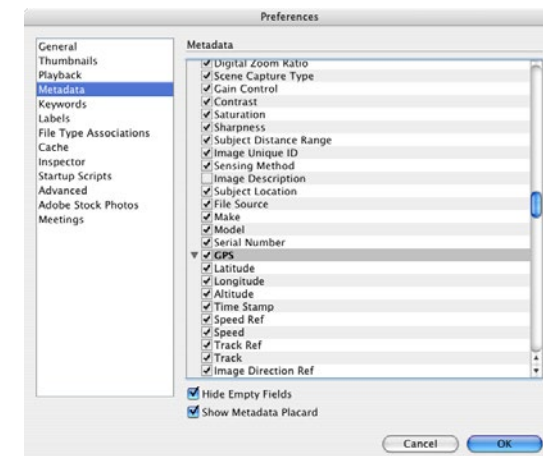
Also, **Metadata** can be searched for keywords, colors, image resolution and much more. One common task is to batch attach Metadata to a series of images. The Shift key will let you select **consecutive** items, the **Command (Mac)** or **Ctrl (PC)** key will select **not-adjacent** items.

Using the **ITPC** (International Press Telecommunications Council) section of the Metadata pane you can now attach up to **30 fields** of **custom Metadata**. Adobe's **Extensible Metadata Platform (XMP)** is a labeling technology that allows you to embed data about a file, into the file itself. Often Camera Raw adjustments are stored in an external .XMP file that needs to be in the same folder with the RAW image.



## Metadata preferences

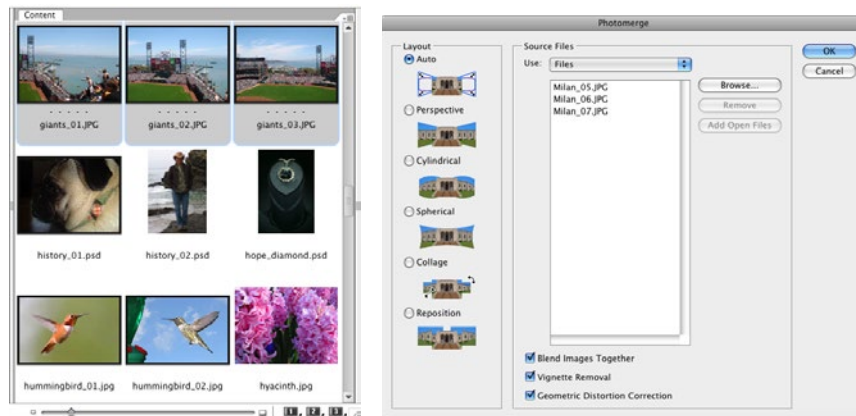
Bridge CS3 hid the Camera model display in the Metadata panel. To turn this back on, choose the Metadata pop-up menu and select Preferences. Just above GPS you'll see **Make** and **Model**, check those 2 boxes to turn the camera make & model back on.





## Photomerge for Panoramic

Bridge allows you to assemble your own panoramic shots. To start, select **3 shots** in Bridge to build a Panoramic. Photoshop will find the overlapping pixels and blend the edges. Choose **Tools > Photoshop > Photomerge**.

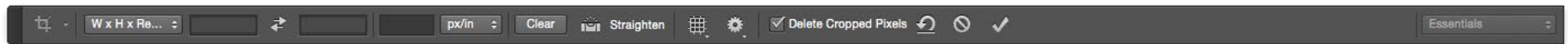


Photoshop preserves the **Layer masks** that were used to blend the image. To disable the mask temporarily (seeing the blending) hold down **Shift** and click on the **mask icon** in the **Layers panel**. To turn the mask back on, **Shift** click the mask icon in Layers again.



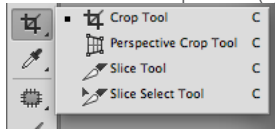
## Cropping Images

Cropping can make a HUGE difference in Photoshop image file size. Taking off just a bit of the image can reduce the file size by quite a bit, as long as **Delete Cropped Pixels** is Checked.

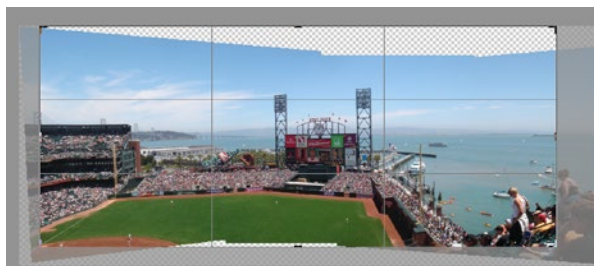


### To Crop an Image

1. Select the Crop tool (c).



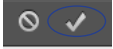
2. When you choose the Crop tool in newer versions of Photoshop, the image will automatically have a frame around the edge. Pull from any corner, or the middle crop handles, to select the area you would like to keep.



*Tip: If you feel the crop tool jumping and find it difficult to crop off an exact area, hold down the **Ctrl** key (Control on Mac) as you drag the crop bounds to prevent snapping.*

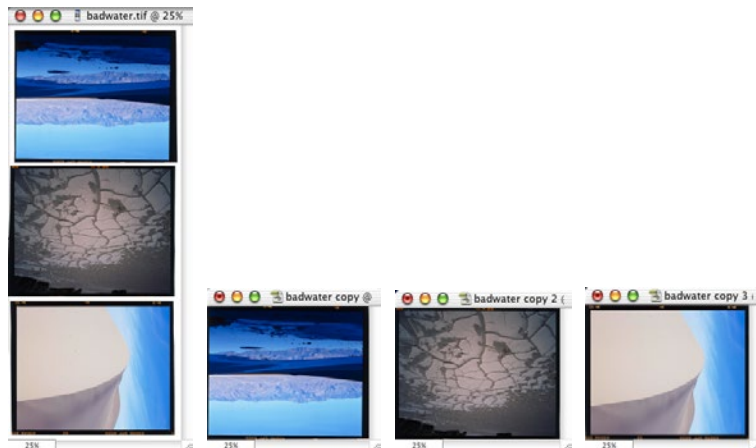


3. To finish the crop, do any of the following:
- Hit Return or Enter on your keyboard
  - Double-click in the center of the crop area
  - Click the Check Mark on the Options bar at the top of the screen



## Crop & Straighten Photos

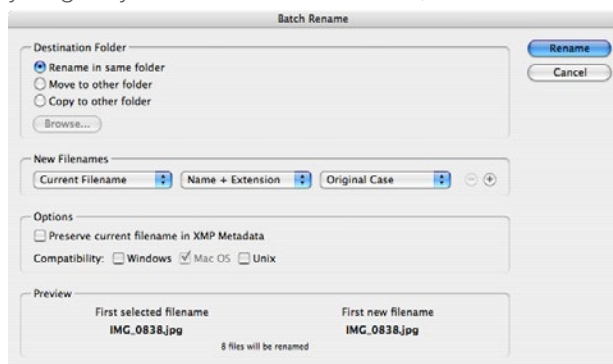
In order to save time, scans can be ganged (even if that isn't a feature of the scanner) and Photoshop can find the edges and turn each image into its own file. Scan several photos at once and choose **File > Automate > Crop and Straighten Photos**.



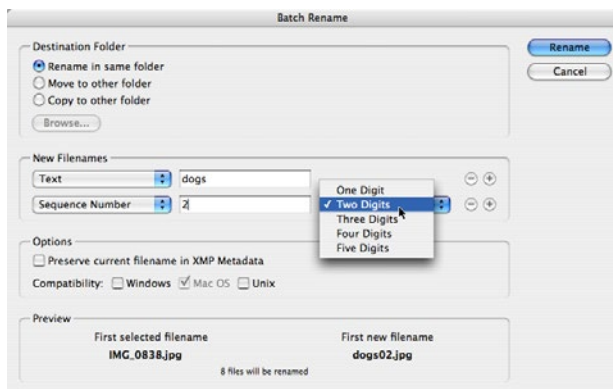
## Batch Rename

It seems these days that everyone has a digital camera, even my grandparents, who don't own a computer. All cameras seem to pick useless-arbitrary names, this can be easily solved using Bridge.

1. In Bridge, select the folder of images you would like to rename (*if you've clicked on an image, Select All before starting*). Choose **Tools > Batch Rename (Command Shift R or Ctrl Shift R)**. If the default setting doesn't let you give your files a custom name, **Click on Current Filename and choose Text**.



2. After you've selected **Text**, type the desired filename (*recommendations for naming are on the right margin of this page*). Typically, you will want a **sequence number** or letter to separate the items. The **plus sign** to the right of text will let you add a variety of items to the filename, such as date, number, letter, current filename and more. I recommend that you use a 2 digit number, if there are more than 100 images 3 digits is recommended.



### Notes on File Naming

*Many Unix servers, which are often used in print shops, may have a problem with illegal characters such as / & ; and may be sensitive about the use of a period (Windows machines won't read past the first period). To build good work habits, you should always name files with lower case characters, instead of a space use underscore\_ and never use more than one period in a file name, separating it from it's proper 3 or 4 letter extension.*

### Only use:

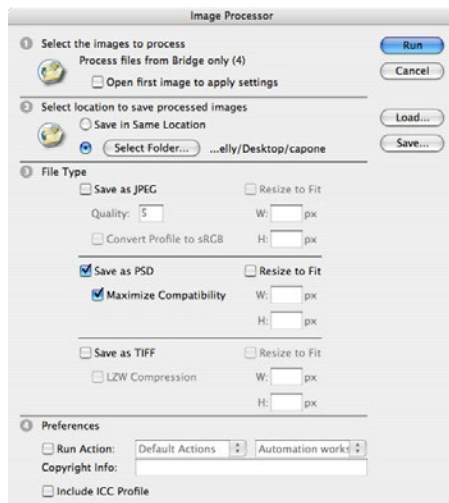
letters  
numbers  
under\_score  
hy-phen  
one period  
(separating the name from the extension)  
Maximum of 31 characters

### Example:

wedding\_1942.tif (*correct*)  
Wedding 1942 kfm (*incorrect*)

## Image Processor (Batch Conversions)

This is one of the easiest and most useful tools in Bridge, next to Batch Rename. The **Image Processor** will take a folder full of images and convert them to another format. Often this is useful to take your camera's raw JPEG images and convert them to an un-compressed format such as PSD or Tiff. In Bridge choose **Tools > Photoshop > Image Processor**. This will create a new folder for all the images, in this case the folder will be named PSD. If you changed the format to Tiff the folder would be named TIFF.

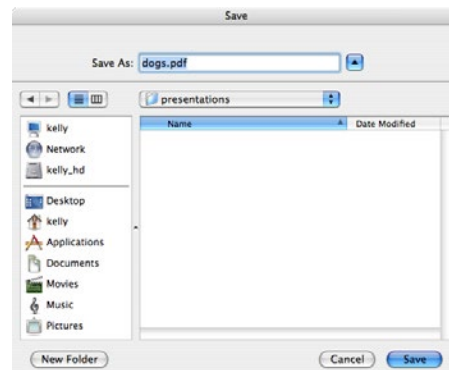
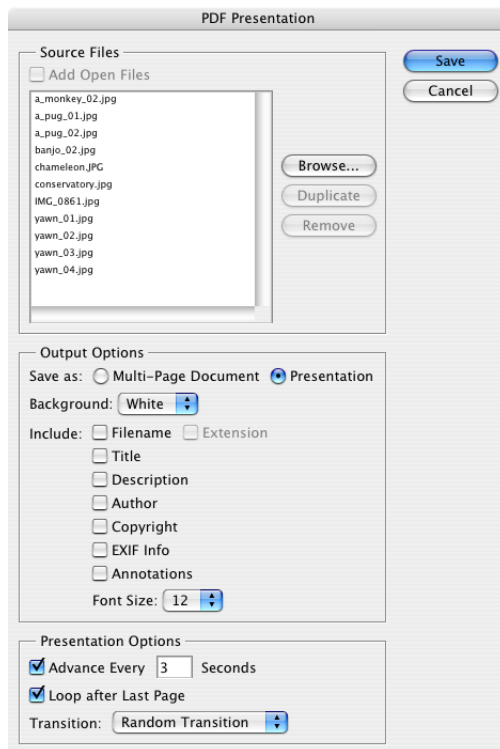


## PDF Presentation (gone in CC)

If you have a collection of images that you would like to give to someone (*regardless of platform*) **Adobe Bridge** now includes the ability to create a **self-advancing slide show** as a **PDF**. From the **Bridge** window choose **Window > Workspace > Output**.

Bridge can automatically assemble a Web Photo Gallery or PDF Contact sheet (Bridge CS2 – CS6) by choosing **Window > Workspace > Output**. **THIS is GONE** in Photoshop CC! You can create **Contact Sheets** in **InDesign** by using **Window > Utilities > Scripts**, then expanding JavaScript and/or AppleScript and running ImageCatalog.applescript or ImageCatalog.jsx (*respectively*). There are other methods to create Contact Sheets, like “gridify” in **InDesign** with **Dynamic Captions**.

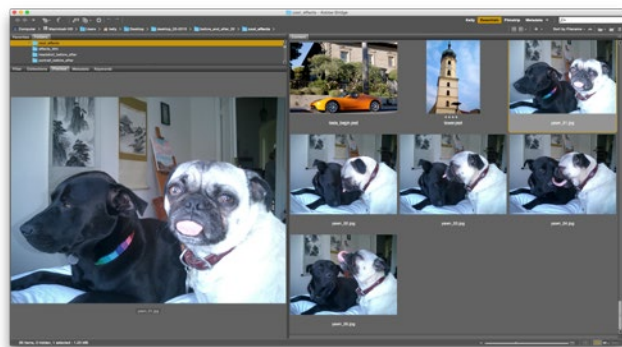
*Note: Be nice to the person receiving the presentation and tell them that the **ESC** key will exit the slideshow.*



## Adobe Camera Raw (ACR) & Batch Corrections (JPG & TIFF)

When processing many images from one shoot, Camera Raw (*CRW*) is the absolute best format to shoot in, giving you the most control over the developing of your images. With RAW images, corrections can be applied to one photo, then Copied and Pasted to an entire series. These settings are also **nondestructive** and the images can be restored back to the original at any time.

1. Launch **Adobe Bridge**, **File > Browse in Bridge** (**Command Option O** or **Ctrl Alt O**) and navigate to the images you would like to correct. Images shot in RAW will automatically open the **Adobe Camera Raw (ACR)** plug-in. *JPEG and TIFF images can be opened in ACR using File > Open in Camera Raw (Command R or Ctrl R)*



2. Correct the image in the ACR dialog using the Basic tab.



3. Adjust your settings and click **Done**.

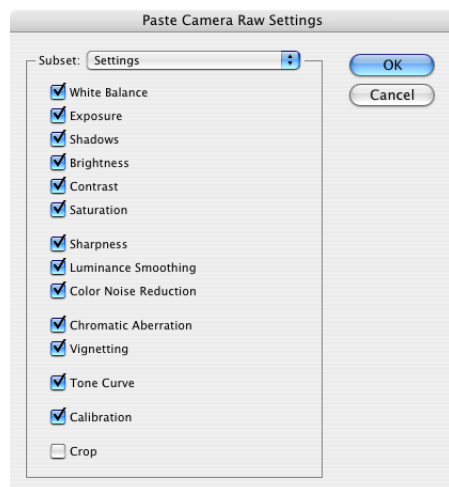
### Camera Raw Adjustment Order

#### Camera Raw adjustment order

*(Kelly's recommendations, not Gospel):*

- Temperature or Tint (*Remove any color cast.*)
- Exposure (*Often I go a little lighter than I'd like, the Blacks dial will help bring back richness.*)
- Blacks (*Darkens the Black area of the image*)
- Highlights (*Lighten or darken, this dial protects the lightest areas of the photo.*)
- Clarity (*Mid-tone contrast, looks sharper, but isn't technically sharpening.*)
- Shadows (*Open up the darkest areas of the photo.*)
- I rarely use Whites, Contrast & Saturation

4. Come **back to Bridge** and choose:  
**Edit > Develop Settings > Copy Camera Raw Settings** (Command Option **C** or **Ctrl Alt C**).



5. Select the other images in the series and choose  
**Edit > Develop Settings > Paste Camera Raw Settings**  
(Command Option **V** or **Ctrl Alt V**).

*Usually I will finish by running **Tools > Photoshop > Image Processor**, to make different corrected versions of my images.*

## Centralized Color Settings

The Color Settings File (**csf**) you choose for each application determines how embedded color profiles are handled, how your color is converted from RGB to CMYK and how to handle profile mismatches.

Color Management settings have never been this easy to load. In Bridge, choose **Edit > Color Settings (Command Shift K or Ctrl Shift K)** and select your desired profile. Bridge will Synchronize Illustrator, Photoshop, InDesign and Acrobat (not version 7 or older, only Acrobat 8 and newer). The default color settings are **North America General Purpose 2**, which use **sRGB** as the standard color profile for web or on-screen images (*this profile has the lowest gamut of reproducible colors and is NOT RECOMMENDED for print*). If you do nothing else, you should switch your profile to **North America Prepress 2**, which uses the better **Adobe RGB 1998** profile. This profile also works well in many browsers and on Facebook for displaying better color (*as of 2011*).

In order to get a more accurate view of what your colors will look like on press, be sure to choose **View > Proof Colors (Command Y or Ctrl Y)**.



## Color Management with ICC Profiles

By definition **RGB** color spaces are matrix-based color spaces. The idea of attaching or assigning a **color profile** is to map the gamut of the source space to the output space (*often smaller, or a different shaped color maps*). Color profiles smartly re-assign and compress colors and tones as needed to go from one gamut to another.

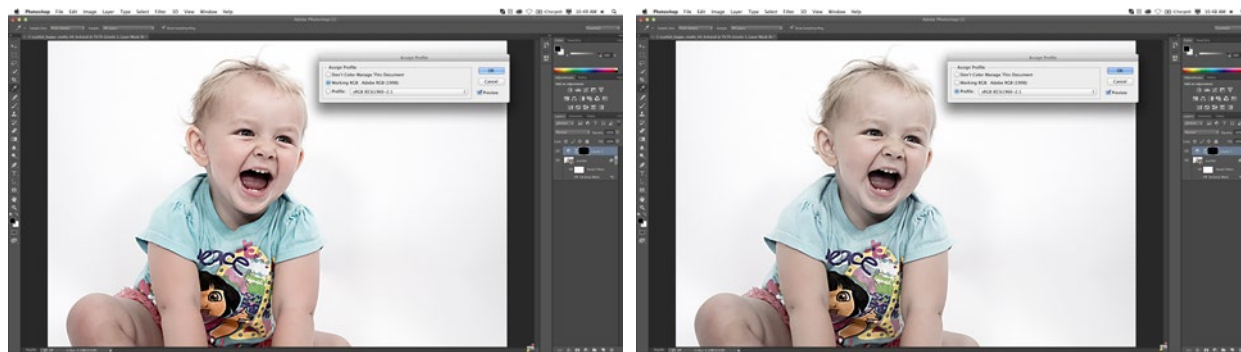
Using the controls in ACR (*Adobe Camera Raw*) as a soft proofing environment (*wether in Bridge, Photoshop or Lightroom*) gives you control over how the re-assign and compress colors when moving from one color space (or gamut) to another. For example: moving from sRGB to Adobe RGB or ProPhoto to **Adobe RGB** compression and re-mapping are performed.

Converting from one gamut to another (*profile to profile*) can create color shifts. If you have a shade of blue in ProPhoto that is too saturated to be represented as sRGB, you can either:

1. Switch the profile in Photoshop, Lightroom or the Adobe Camera Raw dialog. This maps the colors for you, which means you are doing a hard clip. This can sometimes do bad things but often isn't noticeable (*especially by non-photographers*).
2. Change the blue using some ACR control so that the re-mapped or compressed color does fit in sRGB gamut.

### Edit > Assign Profile

Photoshop (*and the other Creative Cloud applications*) can change (*and attach*) a new ICC Profile by choosing **Edit > Assign Profile**. Assigning a profile gives you a better, and more accurate, soft proof it does not make a permanent change to the color of the image. **Edit > Convert to Profile** does make a permanent switch in the colors of the photo (*after you save & close the file*).





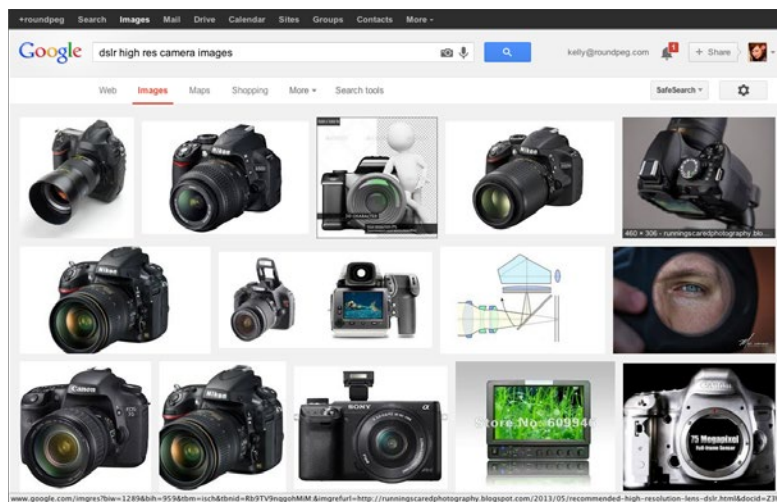
## Color Management on the Camera

Different light sources produce different perceptual color in photographs. When photographing in different environments such as: studio lighting, sunlight on a clear day (*in Los Angeles*), overcast skies (*in Seattle*), using camera flash, office fluorescent tubes, halogen lamps and more the results will be very different. The average person does not recognize these differences because human vision does a great job of neutralizing color differences.

Cameras are not capable of neutralizing these colors without specific settings changed by the photographer. All digital cameras have white balance settings (*even your iPhone with an App*) which can be set to match the main light source of your shooting environment. This will remove strong color casts in your photos.

The Kelvin Scale was developed by William Thomson in 1864. The standard temperature for viewing photographs and shooting photos is 5000° Kelvin, there has been a movement toward 6500° Kelvin in the last 10 - 15 years.

Auto White Balance (**AWB**) seems like a good idea to start with (*for beginners*). More experienced photographers know this is not the best choice. AWB uses different algorithms to neutralize the color of the environment for every picture taken (*even of the same scene in the same lighting conditions*). This will cause the color to shift with each photo taken. Unless you are shooting in **Camera RAW** (DNG, NEF, CRW, CR2, and more) you should set the white balance to match the light source. Refer to the camera manual to learn what the icons look like and how to change them. Set to local conditions: tungsten for indoors, sunlight for clear sky, overcast for cloudy days, etc.

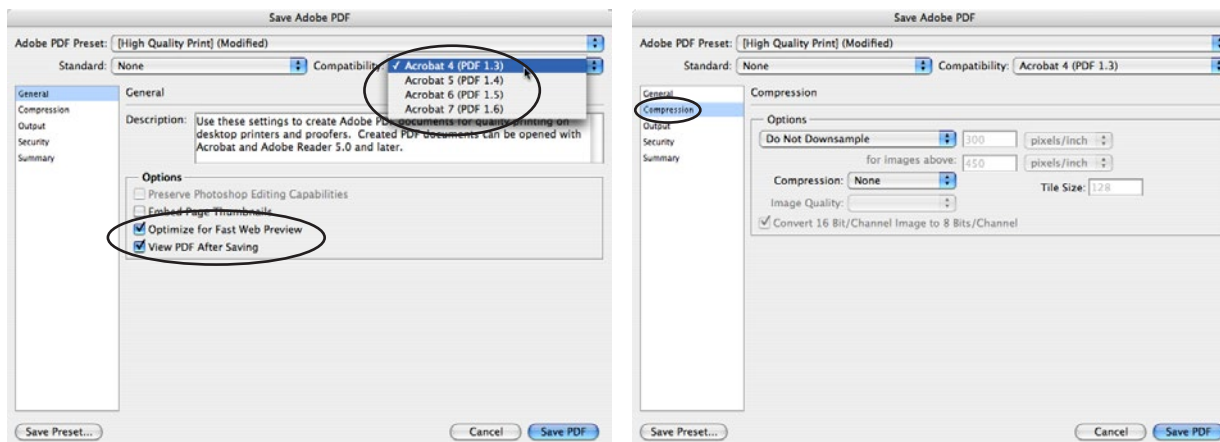


## Shared PDF Settings

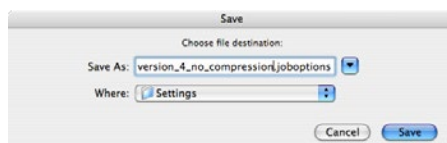
All Creative Cloud applications can **share Adobe PDF settings** (formerly called *Job Options*) between applications. This means if you build custom settings in any Creative Cloud application, they will be available in the other applications. For example; if you create a PDF in InDesign and Save a Preset, you can use the same settings in Illustrator and Photoshop.

When creating the PDF presentation, as shown on the previous page, it is a good idea not to change the compression settings on JPEG images (*which are the most common format for digital cameras*). When a JPEG is first saved, it evaluates what data won't be missed and throws away pixels. For example, on the first save you might lose 1,000 pixels. On the second save of a JPEG, it will reevaluate the image and might throw away another 1,000 pixels. Therefore the image gets progressively worse in quality.

In most cases, if you're not sure which version of **Acrobat** or the **free Adobe Reader** the receiver has, it is safest to choose **Acrobat 4** for **Compatibility**. This way, anyone with Acrobat 4 or newer can open the file.



Once you have customized your options, **click Save Preset** in the **lower left corner**. **Do not** change the **default location**, or the settings will not show up in other applications.



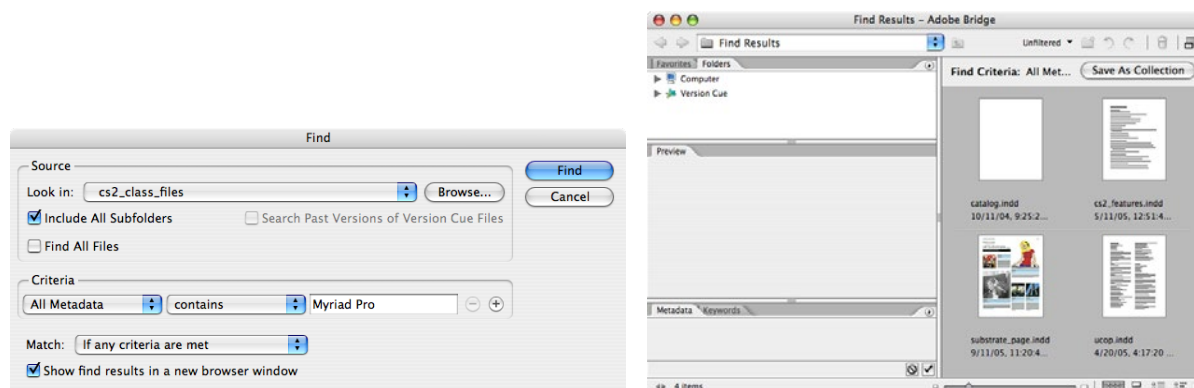
## Rotating Images

How often do you purchase stock photography and they are all in the wrong orientation? Well, now you don't have to build an action to correct the image. Under the **Edit** menu you can locate **Rotate 90°** Horizontal, Vertical or 180°. There are also **rotate buttons** at the top right corner of the Bridge window.



## Powerful Searching

In Bridge choose **Edit > Search**, in the dialog box under **Criteria** choose **All Metadata**. In the example below, a folder was searched for the **font Myriad Pro** and returned **four results**. Other attributes you can search for are: Pantone® colors, Camera Model, Keywords, File Name and much, much more.



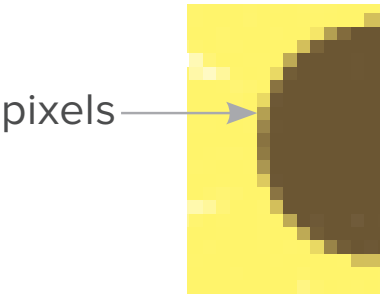
# Graphics Info

All computer based images fall into one of two categories: **Raster** or **Vector**.

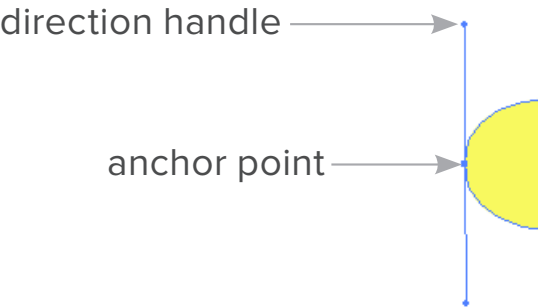
**Adobe® Photoshop®** is the most popular **Raster** image editing application. Photos (*typically*) are made up of **pixels** (*a raster image may also be called a **Bitmap***).

**Adobe® Illustrator®** is the most common **Vector** drawing application (*vector art may also be called **Bézier Curve***). Vector graphics consist of lines and curves, defined mathematically, and are made up of **points**. Vector images have **no resolution**. Vector drawings typically have smaller file sizes than Raster photos. Vector images and can be printed at 2% or 2,000% without a quality loss

**Raster** (*pixels*)



**Vector** (*points*)



Raster or Bitmap	Vector or Bézier Curve
<ul style="list-style-type: none"><li>• The image resolution made up of <b>Pixels</b> (<i>it is measured in pixels per inch, ppi</i>)</li></ul>	<ul style="list-style-type: none"><li>• Has <b>no</b> resolution and is made up of <b>Points</b></li></ul>
<ul style="list-style-type: none"><li>• Images typically <b>can not</b> be <b>scaled</b> up beyond 120% or they become “jaggy”</li></ul>	<ul style="list-style-type: none"><li>• Printed images will look good at 2% or 2,000%</li></ul>
<ul style="list-style-type: none"><li>• Raster images are usually much larger than vector</li></ul>	<ul style="list-style-type: none"><li>• Vector images are typically smaller than raster at the same size</li></ul>

## Ideal Resolution

300 ppi	Press Quality
150 – 225 ppi	Laser/Inkjet or “Office Quality”
72 ppi	Web & Device (standard) — 144 ppi for Retina or HiDPI (2x web resolution)

## Common Line Screens

Newspaper	=	85 – 100 lpi
Magazine	=	133 – 175 lpi
Coffee Table Books	=	200 lpi and up

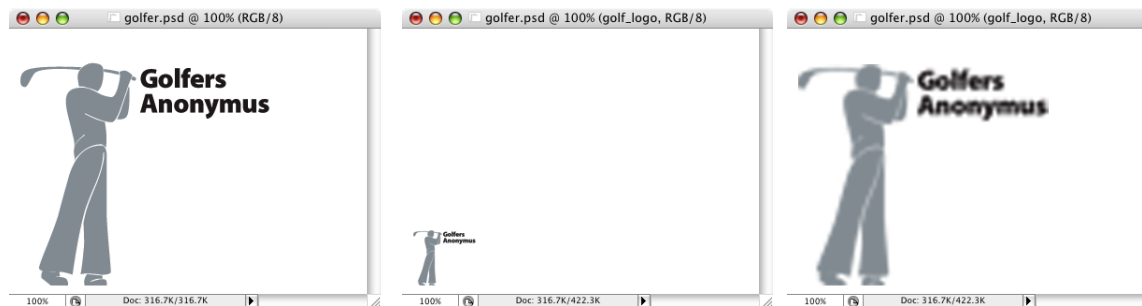
## How Resolution Affects File Size

Every time you double the resolution of a Raster image, the file size gets 4x bigger. These file sizes are for flat PSD images, when you add layers the file grows larger.

8.5 x 11 • 72 ppi • RGB	=	1.39 MB
8.5 x 11 • 150 ppi • RGB	=	6 MB
8.5 x 11 • 300 ppi • RGB	=	24 MB
8.5 x 11 • 600 ppi • RGB	=	96 MB

## Transforming Raster Images

If you take an image that starts at a decent laser printer resolution, for example 150 ppi, then scale it down and decide to scale it up again later, significant quality loss occurs.



## DPI vs PPI

**DPI** (*Dots Per Inch*) technically refers to dots in an inch, also called spi. **PPI** (*Pixels Per Inch*), usually refers to scanned resolution. It is displayed in Photoshop under image size and is also called dpi. When referring to hardware resolution, **SPI** (*Spots Per Inch*) is more technically accurate. PPI is a better method of differentiating between hardware and software terminology. PPI would mean software, SPI would mean hardware, unfortunately DPI is used commonly to describe both.

## Resolution Formula

The formula below is to be used for all Grayscale, RGB and CMYK images.

2 x Line Screen = Ideal Resolution

1.5 x Line Screen = Minimum acceptable Resolution

### Practice

LPI = 85   Ideal = \_\_\_\_\_   Minimum = \_\_\_\_\_

LPI = 100   Ideal = \_\_\_\_\_   Minimum = \_\_\_\_\_

LPI = 133   Ideal = \_\_\_\_\_   Minimum = \_\_\_\_\_

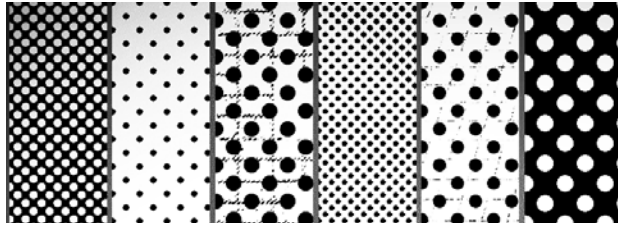
LPI = 150   Ideal = \_\_\_\_\_   Minimum = \_\_\_\_\_

LPI = 175   Ideal = \_\_\_\_\_   Minimum = \_\_\_\_\_

LPI = 200   Ideal = \_\_\_\_\_   Minimum = \_\_\_\_\_

## LPI

**LPI** (*Lines Per Inch*) refers to **Halftone Screen** or **Line Screen** or **Frequency**. When printing on offset presses, gray ink is not actually used. A screen is created of black dots that trick the eye into seeing shades of gray and simulate continuous tone. Fewer lines in an inch create lighter shades of gray. More lines in an inch create darker shades of gray.



## After the Scan

Determining Proper Resolution after an image has been scaled.

Starting PPI ÷ Scaling %

Example:  $300 \text{ ppi} \div 200\% (2) = 150 \text{ ppi}$  • or  $300/2 = 150$

### Practice

PPI = 100   Scaling = 200 %   New Printed Resolution = \_\_\_\_\_

PPI = 200   Scaling = 150%   New Printed Resolution = \_\_\_\_\_

PPI = 300   Scaling = 50%   New Printed Resolution = \_\_\_\_\_

## Resolution vs Quality



**30 ppi ▪ 12 KB**



**72 ppi ▪ 28 KB**



**100 ppi ▪ 40 KB**



**225 ppi ▪ 144 KB**



**300 ppi ▪ 240 KB**




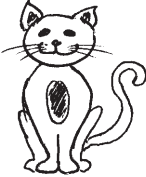





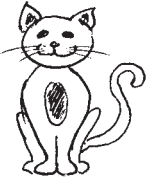


**500 ppi ▪ 644 KB**



Exception to the Rule

LineArt/Bitmap is the exception to the scanning rule. All LineArt images should be scanned at 600 – 1200 ppi. You may go as high as your imagesetter output resolution, for example 2400 or 2540 ppi.

		100 PPI • 16 KB
		300 PPI • 76 KB
		600 PPI • 284 KB
		1200 PPI • 1 MB
		2400 PPI • 4.2 MB

## Graphic File Formats

It is important as a graphics professional to choose the correct format for the intended use of the image. Here is a summary of the most popular file formats.

### Print Formats

#### PSD

Adobe® Photoshop™ Document is the default file format for newly created images with layers. This encoded format is the only one that supports all available image modes (*Bitmap, Grayscale, Duotone, Indexed Color, RGB, CMYK, Lab, and Multichannel*). As well as other features such as guides, grids, alpha channels, and layers (including adjustment layers).

#### TIFF

TIFF (*Tagged Image File Format*) was developed by Aldus Corporation as a standard for images created by scanners. TIFF is one of the two primary print applications. TIFF is used for black and white (bitmap), grayscale, indexed, RGB and CMYK.

- Always smaller than EPS (unless the EPS is JPEG compressed)
- Can do LZW (Lossless) compression
- Whites are transparent in Bitmap (LineArt) by default

#### Lempel-Ziv Welch compression

LZW was designed by Terry Welch in 1984 in hardware for high-performance disk controllers. It is a variant of LZ78, one of the two Lempel-Ziv compression schemes. LZW compression and decompression are licensed under Unisys Corporation's 1984 U.S. Patent 4,558,302 and equivalent foreign patents.

## EPS (not recommended today)

EPS (*Encapsulated PostScript*) is a platform-independent graphic file format that is supported by most illustration and page layout programs. An EPS file has two parts, PostScript code that describes the image and a graphic used as the on-screen preview. When printed the PostScript portion of the file is sent to the output device. When printing to a non-PostScript printer, the preview is printed instead. An EPS can be **Raster** (*made of Pixels*) or **Vector** (*made of Points*) EPS is usually larger because it can store special things in the header of the file that TIFF can not.

Those things are:

- A Clipping Path (*Silhouette*), this can be done on TIFF's now
- Spot Colors, such as Pantone®
- JPEG Compression (*inside the EPS file, not raw JPEG*)
- DCS (*Desktop Color Separation*), 5 file format which pre-separates the images in the file structure
- Transfer Function (*Curve*)
- Fixed Line Screen (*to override what is sent by the Page Layout program to the output device*)
- Photoshop EPS also supports transparent whites in Bitmap mode.

An used to need to be in EPS format to support these color modes: Monotone, Duotone, Tritone or Quadtone. PSD now works better for these. You may still need to go back to EPS for a fixed line screen or a custom transfer curve.

*Note: Save the EPS with a **TIFF preview** (also known as PC format). The Mac OS 72 ppi PICT preview is stored in the file's resource fork. Since Windows applications cannot read the Mac resource fork, a PICT preview does not display on Windows. Instead, the words "PostScript Picture" display on a gray background in the picture box. If you save the EPS on a Windows computer, choose a TIFF preview instead of a WMF preview.*

## DCS & DCS 2

Desktop Color Separation (DCS), was developed by Quark Inc. and it enables certain applications, such as QuarkXPress, to print Low Resolution placement files with separations off and High Resolution data with separations on. When you save a CMYK image in Photoshop EPS format, you have the option of saving the image as an extension of the standard EPS format. Saving in DCS format creates five files: one file for each of the color channels in the CMYK image and a fifth master file corresponding to the composite color channel. To save the file in standard EPS format without the DCS option, choose Off. This method allows the RIP to process the file faster, because it is pre-separated.

Same as the DCS listed above, except that it now supports more than four colors from Photoshop. DCS 2 also creates one file, instead of five separate files on your hard drive

## Web Formats

### PNG

PNG (Portable Network Graphic) has 2 flavors: 8-bit & 24-bit. The 8-bit format gives you up to 256 colors. The 24-bit format gives you all the colors of a JPEG (*16,777,216*) with the added bonus of transparency and animation. PNG can be larger or smaller than JPEG depending on the colors and the image itself.

#### Format benefits:

- Transparency
- Animation
- 16+ million colors (*in 24 bit*)

### JPEG (ok for print today)

JPEG (*Joint Photographic Experts Group*) is a **LOSSY** format that can greatly reduce the size of a file. If you do too much compression or save a JPEG many times you will experience **PERMANENT quality loss**. JPEG supports 24-bit color, grayscale, RGB, and CMYK. JPEG typically defaults to RGB color space (*and is the default format for most smartphones, tablets and digital cameras*). JPEG was designed for continuous-tone images, so it won't work well with line art (*logos & maps, for example*) or images that contain only a few colors. JPEG files cannot be transparent or have silhouettes, so they will **always** appear **rectangular** on a web page or device screen.

#### Format benefits:

- Millions of Colors
- Smaller file size with higher compression settings

### GIF

GIF (*Graphics Interchange Format*) is an older, highly compressed format that is dying off today and being replaced by PNG. GIF has three main benefits. The first benefit of GIF is interlacing. Interlaced images do not need to be completely downloaded before a user begins to see the image on a web page. GIFs start by showing a very low-resolution version of the image. Then, the image becomes gradually sharper as more of the image is downloaded.

The second benefit of a GIF is the ability to have a transparent background (*or silhouettes*). The last benefit of a GIF is animation. GIF images are stored in Indexed color space and should **NEVER** be used for print.

## Formats to Avoid

### PICT

The PICT (*Picture*) format is widely used among Macintosh® graphics and page-layout applications as an intermediary file format for transferring files between applications. The PICT format is especially effective at compressing images that contain large areas of solid color. This compression can be dramatic for alpha channels, which often consist of large areas of white and black. When saving an RGB image in PICT format, you can choose either a 16-bit or 32-bit pixel resolution. For a grayscale image, you can choose from 2, 4, or 8 bits per pixel. If you're using a Macintosh with QuickTime installed, you can also choose from four JPEG compression options for the file.

### BMP

The BMP (*Bit Mapped Paint*) format is widely used among office based PC users. BMP is typically in RGB (Red, Green, Blue) color space and low resolution (72 ppi). This should be avoided by people who want to print. It is acceptable for on-screen use only. BMP contains black&white, 16-color, 256-color and Truecolor image data. The palletized 16-color and 256-color images may be compressed with run length encoding.

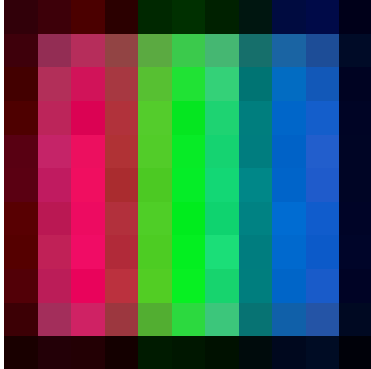
### WMF

The WMF (Windows Metafile) format is also widely used among office based PC users, it was developed by Microsoft. WMF is typically in RGB (Red, Green, Blue) color space and low resolution (72 ppi). This should be avoided by people who want to print. It is acceptable for on-screen use only. It file consists of a set of Windows specific instructions to draw a Vector (point-based) graphic. This is an nice format for image interchange between Windows applications, but is not very useful on other platforms.

## Color Modes

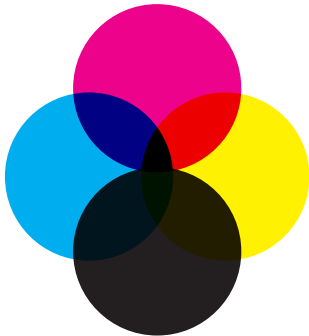
There are two primary color spaces for images: RGB (*Web Only*) and CMYK (*Print*).

### RGB



RGB (*Red, Green and Blue*) is used primarily for web-based images and is known as **Additive** color. RGB is measured in Color Levels from 0 - 255, for a total of 256 shades.

### CMYK



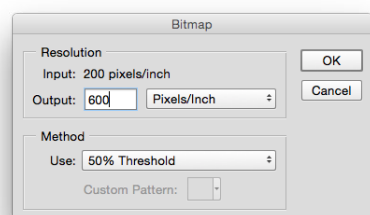
CMYK (*Cyan, Magenta, Yellow and Black*) are the four primary print colors for all printing presses and color printers. CMYK is known as **Subtractive** color and is typically referred to by printers as **Process** color. CMYK is measured in Percent from 0% – 100%.

## Grayscale

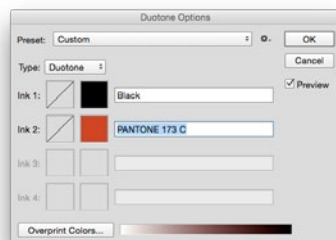
Grayscale images are used in print for photos that are black and white. Grayscale files have **1 color channel** with **256 shades** (or levels) of gray. To convert a color photo to Grayscale for print in Photoshop, choose **Image > Mode > Grayscale**.

## Bitmap/Line Art

Other print modes include **Bitmap**, which includes **no shades** of **Gray** instead it's black or white only. Truly Bit on or Bit off, hence the name Bitmap.



## Duotone



When trying to save money on print costs for press runs Duotone images use 2 inks (*commonly*) instead of 4 Process colors. To convert to Duotone:

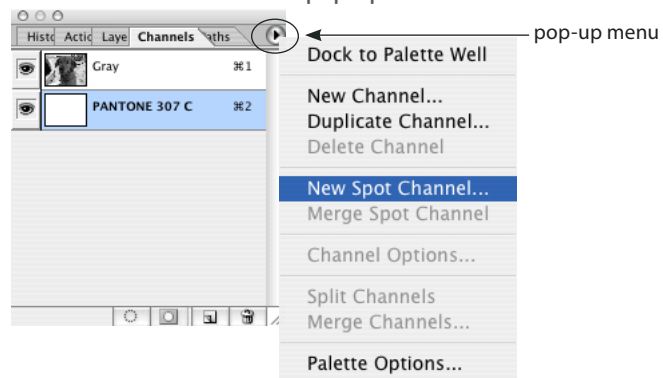
1. First go to **Image > Mode > Grayscale**.
2. Then choose **Image > Mode > Duotone**.
3. In the dialog, choose **Type > Duotone**.
4. Click the white square next to Ink 2.
5. Hit the Color Libraries button and type a Pantone Number.

## Spot Channels & DCS 2.0

Often you may need to multi-channel or multi-ink images which use a Pantone® or Spot color. Outside of just creating a Duotone, Photoshop will let you paint in the desired ink. Follow the instructions below to achieve the result on the right.

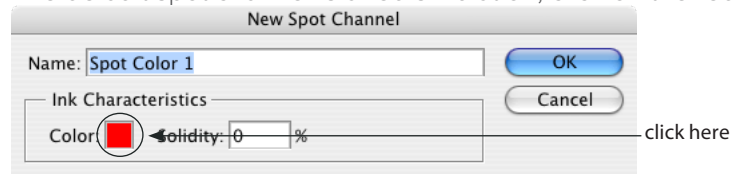


1. Open an image to be colored.
2. Choose **Image > Mode > Grayscale**.
3. Go to the **Channels Panel** pop-up menu and choose **New Spot Channel**.

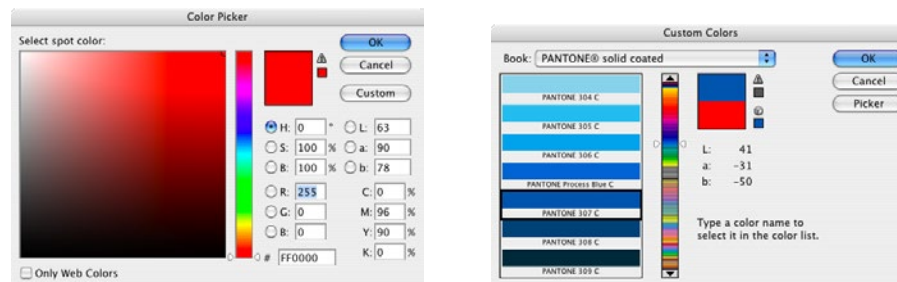




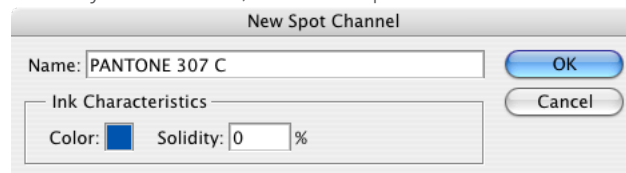
4. The default spot channel is a red simulation, click on the red color icon to select a Pantone®.



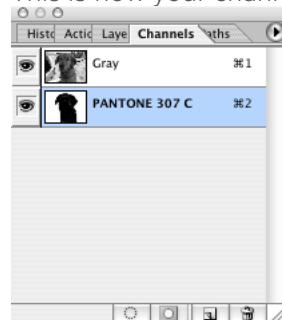
5. In the Color picker window, click **Custom**. You won't see a dialog box or field to type in, but with the Custom colors window up type your desired Pantone® number. **Photoshop searches as you type**, in the example below I typed 307, but you must type quickly, if you pause it will go from the 300's to the 0's to the 700's.



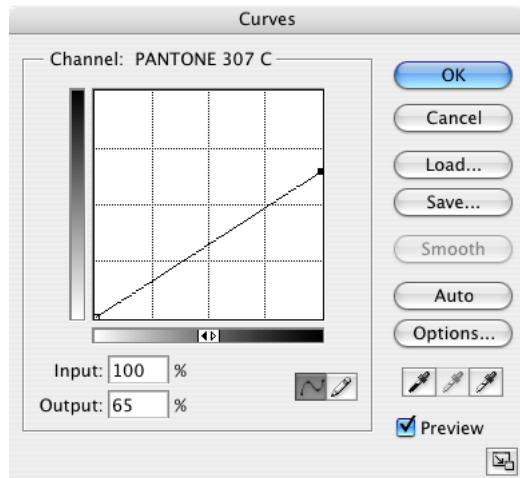
6. When you click OK, the new spot channel should have the proper color and name.



7. This is how your channels panel should look.



8. If you would like to lighten the amount of ink, make sure the Pantone® channel is selected, as shown above. Now choose **Image > Adjustments > Curves** (**Command M** or **Ctrl M**). In the example below, I lightened the entire blue Pantone channel 35% by dragging the marker at the 100% ink value down to 65%.



## Selections

In order to affect one portion of an image you can use a selection to isolate that portion and protect the areas outside of the selection. After selecting an area, you can do color correction, run filters, make edits in the selected area without affecting the parts of the image outside the selection. The technical term for the flashing lines on the edge of a selection is **Marching Ants**. Photoshop has several selection tools, including:

- Rectangular Marquee — *Selects rectangular areas*
- Elliptical Marquee — *Selects circular or oval areas*
- Single Row & Single Column Marquee — *Selects a single horizontal row or vertical column of pixels*
- Quick Selection — *Lets you “paint” in a selection*
- Magic Wand — *Selects by clicking on a range of colors*
- Lasso — *Free-form drawing of selections*
- Magnetic Lasso — *One-click at the edge to select, Photoshop finds the edges as you move along a shape*
- Polygonal Lasso — *Selects when you click at different spots on an image, plays “connect-the-dots” as you click*



There are other ways to select portions of an image, using menus or panels. Some examples include **Select > Color Range** and Loading Selections from: **Channels**, **Layers** or **Masks**. The pen or shape tools can also be used to create selections.

## Quick Selection Tool

Complex backgrounds used to be very difficult to work with. If the subject you are trying to select has a lot of the same tones as the background, making a selection can be a lot of work. Not anymore! I use the Quick Selection tool (W) to make 85% of my selections in Photoshop. Simply click and drag over the object you are trying to select. This tool uses brush size, the smaller the brush, the more careful the selection is.

### Brush Size Shortcuts

Brush Smaller.....[  
Brush Bigger .....



Image courtesy of Jessica Epstein: [jessepstein.com](http://jessepstein.com)

### Tip

When you are painting with the Quick Selection tool **stay away from the edge** of the object you are trying to select. In the image on the left, I kept my Quick Selection brush **well inside** the boy and let

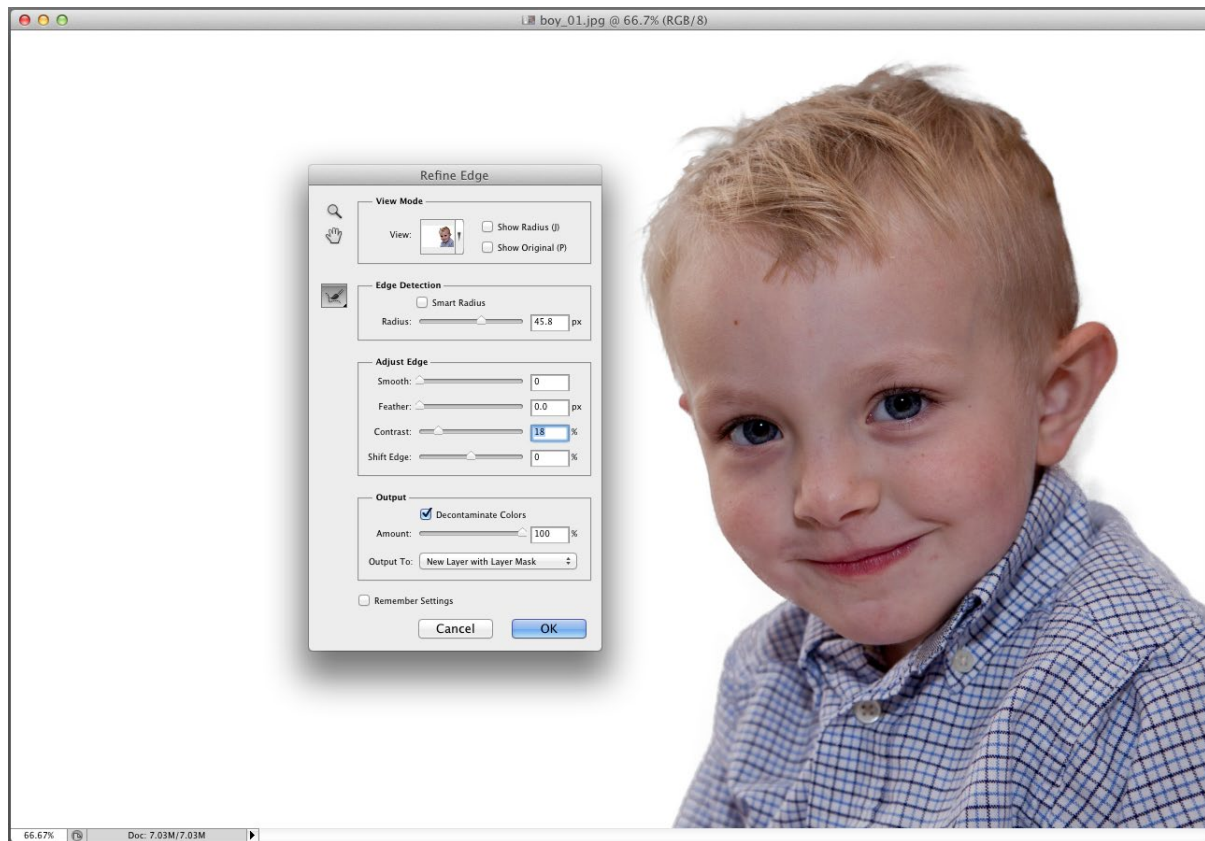
Photoshop do the work of finding the edge. Paint directly down the middle of the image and you will see. Photoshop does a great job.

## Refine Edge Feature

The **Refine Edge** button is on the **Options bar** at the top of your screen, when you're on any selection tool (*Magic wand, Lasso, Rectangular marquee*).



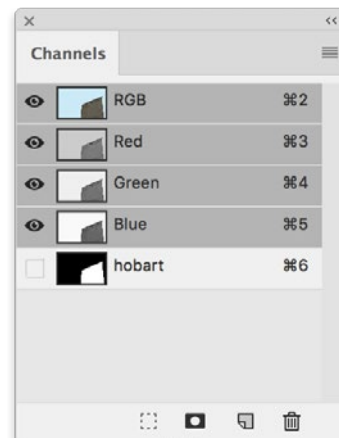
Clicking on the thumbnail to the right of **View** (in the dialog) will let you select a white, black, red, or other back-grounds. This way you can check your edges. If you still see background in your selection, paint on the image (*with the dialog open*) and Photoshop will reevaluate the edges.



## Alpha Channels

Selections can be saved for use later by going to **Select > Save Selection**. A saved selection is technically called an **Alpha channel**. Alpha information is stored as a 0 or 1. The value of 0 is off, the value of 1 is on. This means, in Photoshop terms, 0 is not selected, 1 is selected.

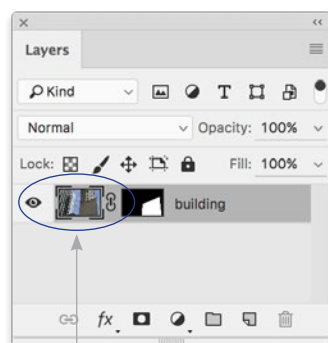
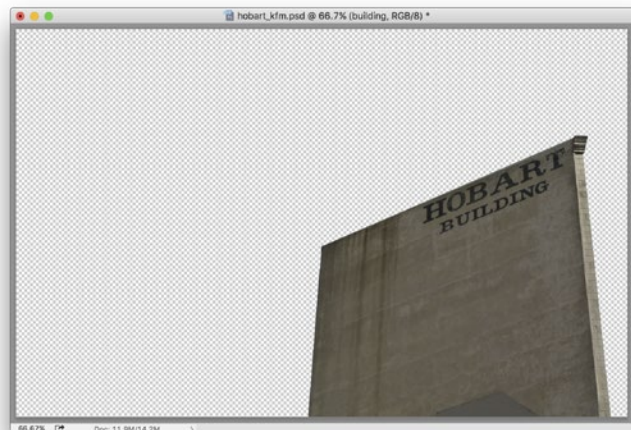
Once you save the selection, you can re-load it by using **Select > Load Selection**.



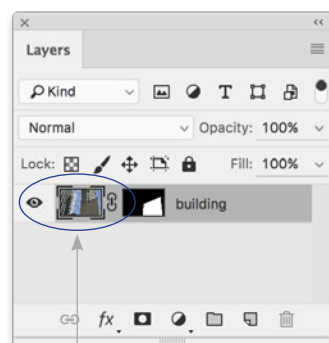


## Masks

An **Alpha channel** can also be used as a **Mask**. In a Mask, the **Black portions** of the image are **outside the selection** and the **White portions** of the image are **selected**. Saved masks can be turned back into a selection using **Select > Load Selection**. This technically loads the Alpha channel back into a selection.



Layer Thumbnail  
Selected

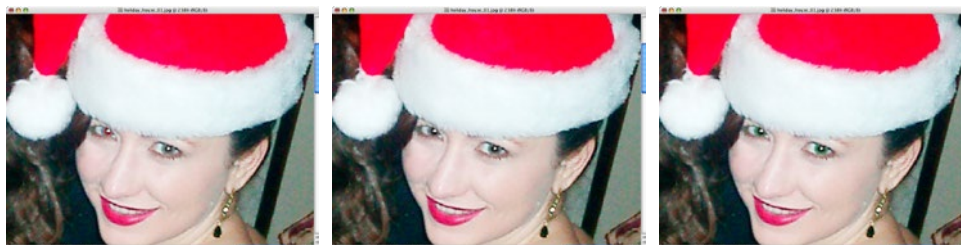
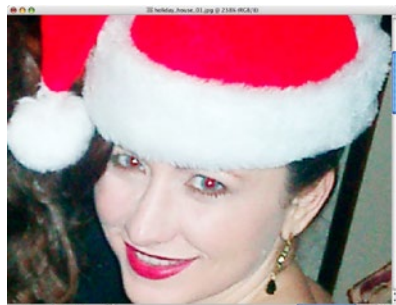


Layer Thumbnail  
Selected

## Red Eye Removal

Finally Photoshop has added **1-click Red Eye** Removal. This not only removes the red, it also darkens the pupil to prevent it from looking gray.

1. Click and hold (*or right-click*) on the **Spot Healing Brush** tool and slide to the **Red Eye tool**.
2. Click in the Red parts of the eye, just once.



3. To Paint in new color, click on **Foreground** and choose the desired color (*green*).



4. Switch to the **Brush** tool, Click on the **Options bar at the top** and change the mode from **Normal** to **Color**.



Paint with Color, not solid

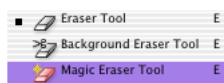
5. Now paint in the eye, the color will change, but the detail will remain.



## Erasing a Background

To quickly remove the background of a layer:

1. Choose the **Magic eraser** tool (*which is hidden under the eraser tool*).

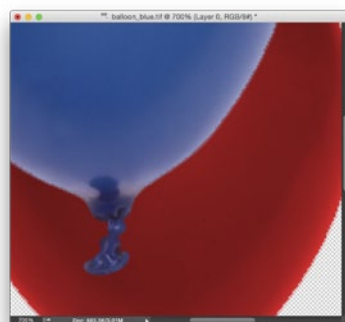
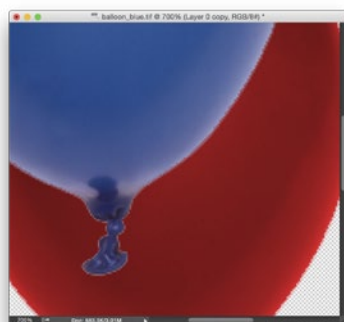


2. Click on a **solid area** of the background. (The **checkerboard** pattern indicates the **transparent area** of the image.)



## Removing Halos

When you remove something from its background, often there is a halo of white or black around the edge of the object. To remove this halo, choose **Layer > Matting > Defringe**. It doesn't matter if you type 1, 50 or 100 it will always do the same amount, so leave it at **1** and click **OK**.



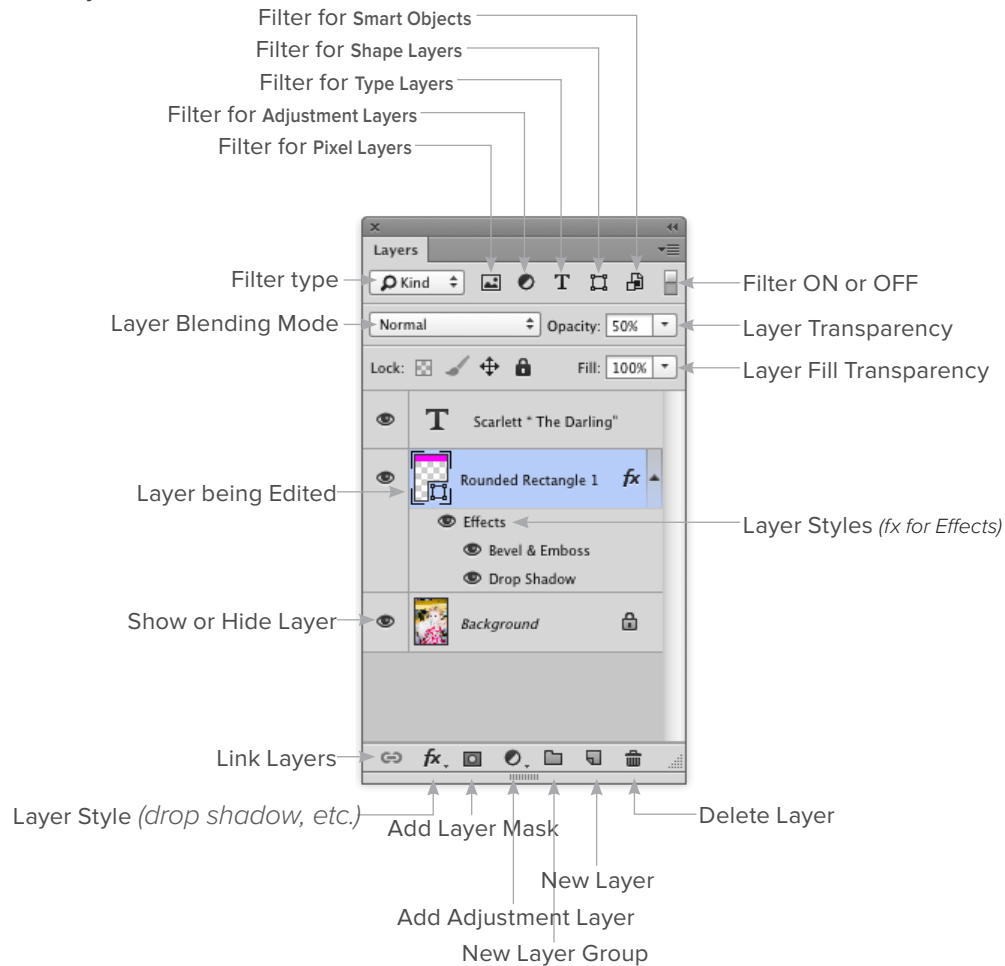
# Photoshop Layers

**Layers** can be thought of as clear pieces of acetate stacked on top of one another. If there is no image on a layer, you can see through to the layers underneath. Layers also control the **stacking order of objects**. There are also special features such as adjustment layers, layer styles and fill layers for creating high end effects.

## The Layers Panel

### Tip

If you are on the Move tool, holding down **option** or **alt** as you drag will copy the layer.



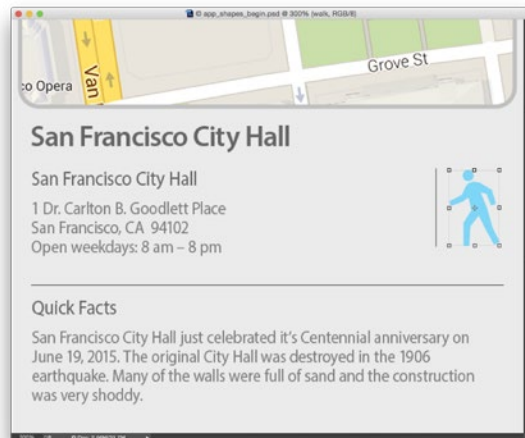
## Auto-Select Layer

If you want Photoshop to know what layer you click on, instead of traveling over to the Layers panel and clicking the layer you would like to move, go to the **Move tool** and click **Auto Select** on the **Options bar** at the top of the screen.



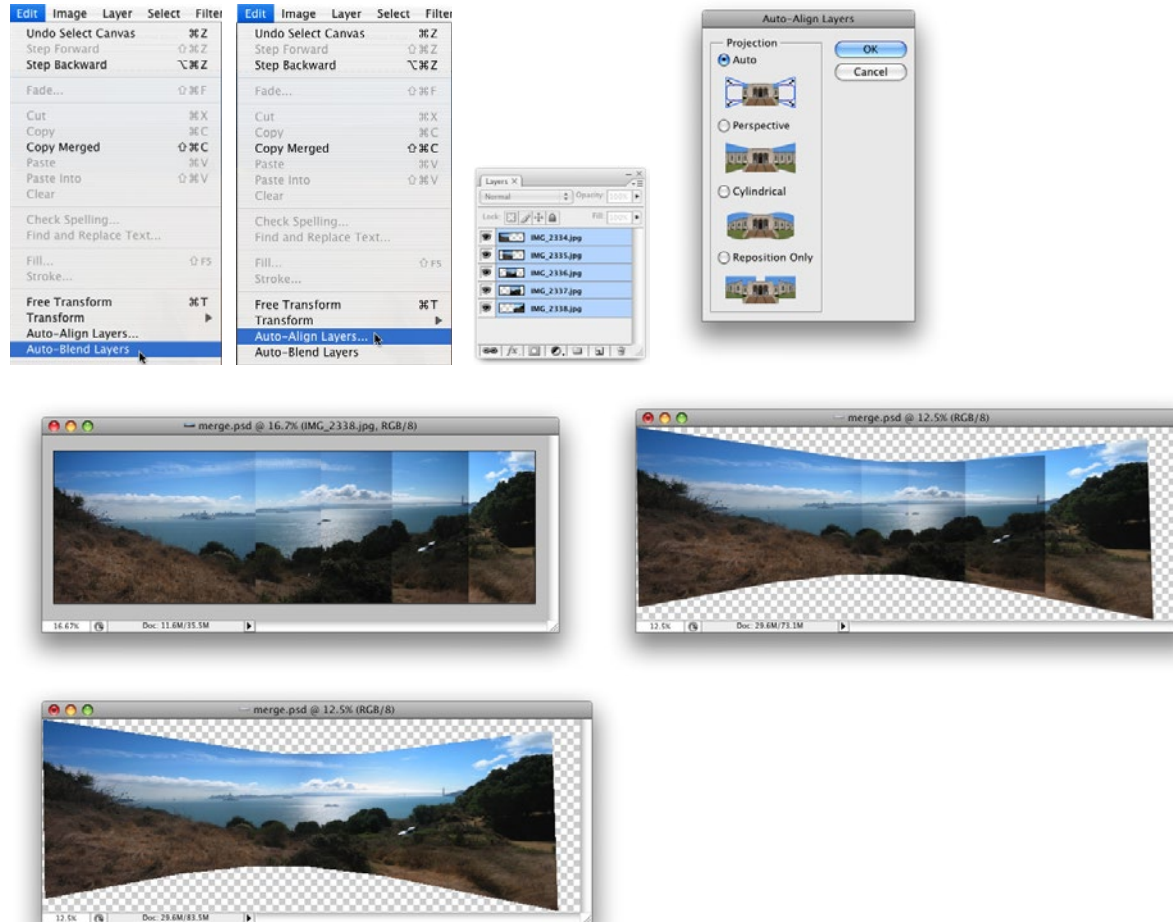
## Auto Free Transform

If you scale or transform objects often, it can be helpful to check on the Options bar, **Show Transform Controls** (when you are on the Move tool). This will give you selection points around every layer you go to, so you can easily hold down Shift and proportionally scale objects & Layers.



## Auto Align and Auto Blend Layers

If you have images that need to be blended together to make a panoramic, or lined up to create a layer mask these two features will save you a ton of time. **Edit > Auto Align Layers** or **Edit > Auto Blend Layers** (for stacked images with different focus settings).

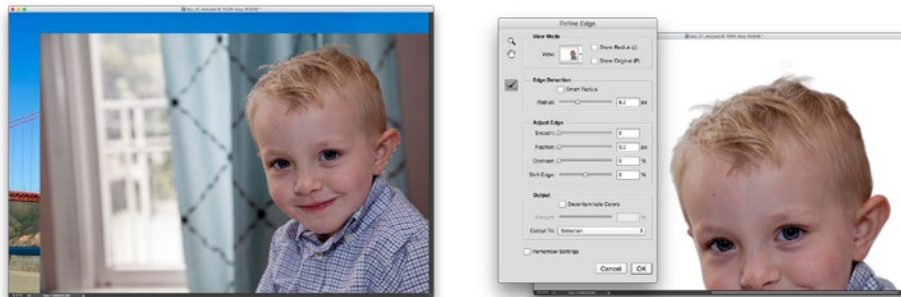


## Layer Masks

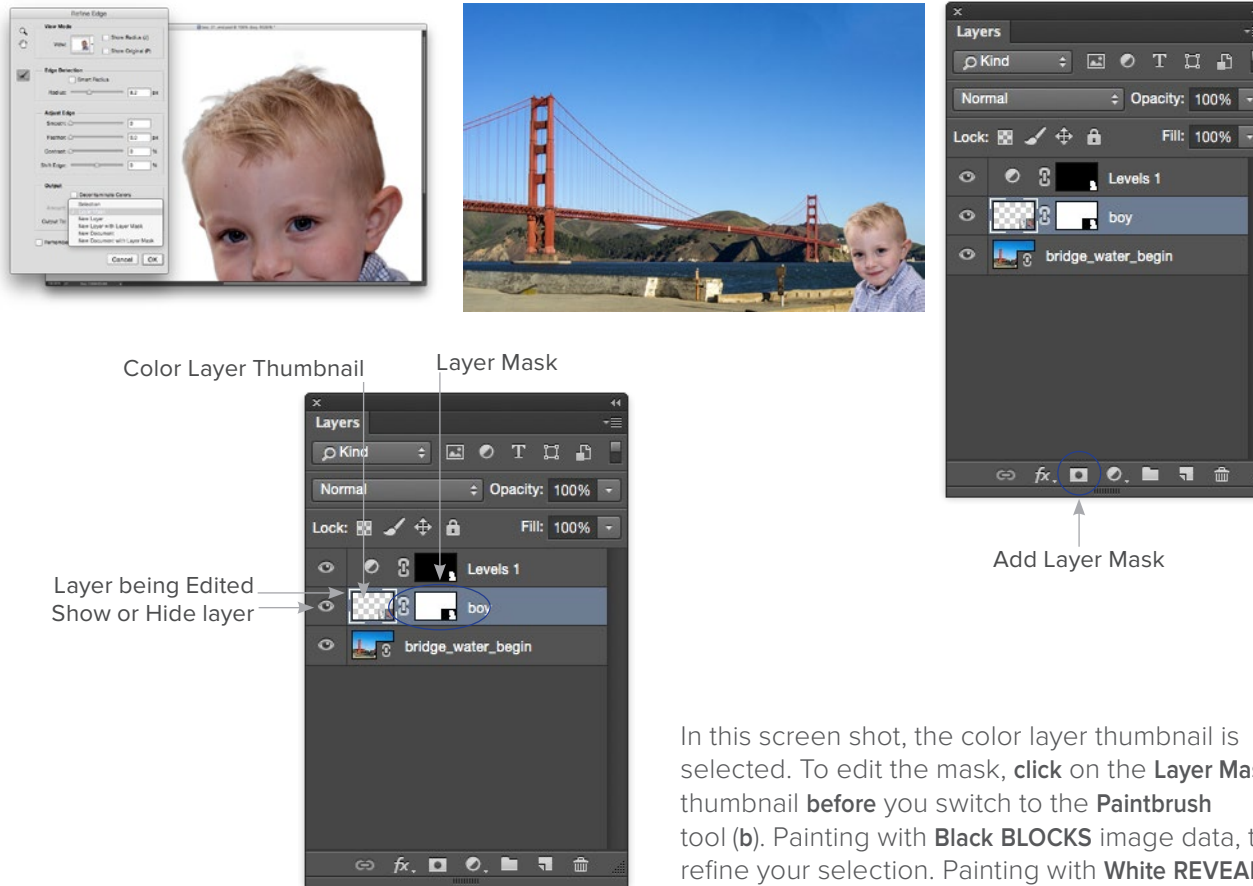
When it comes to **dropping in backgrounds** or putting **new people in photos**, there is no better method than a **Layer Mask**. Layer masks never harm the original image and if you mess up in your selection, painting tools such as Erase and Paintbrush can be used to hide or reveal parts of the image.



1. In Bridge, select your two images and go to **Tools > Photoshop > Load Files into Photoshop Layers**.
2. Use the **Quick Selection** tool (**W**) or your favorite selection tool to select the area to be hidden (*masked*) from the layer.
3. Once you are happy with the selection go to **Select > Refine Edge**, or click the **Refine Edge** button on the **Options Bar**.



4. In the **Refine Edge** dialog, you can select **Output to: Layer Mask**, before you click **OK**. If you click OK to quickly, you can hit the button to **Add Layer Mask** at the bottom of the **Layers** panel. Now the desired area is hidden (or masked) from the layer, but no pixels were actually deleted.

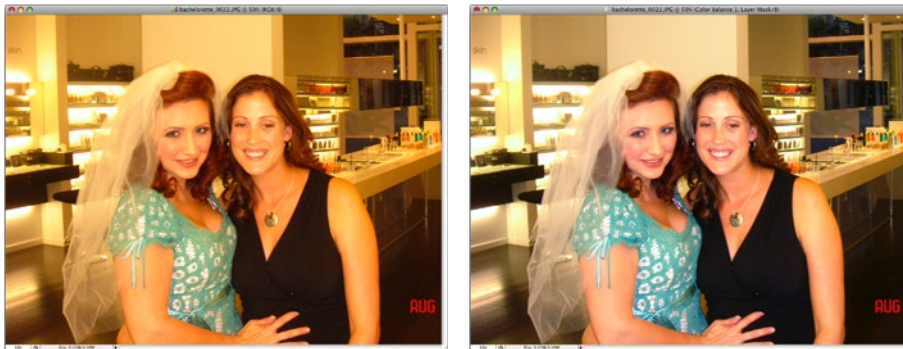


In this screen shot, the color layer thumbnail is selected. To edit the mask, **click** on the **Layer Mask** thumbnail **before** you switch to the **Paintbrush** tool (b). Painting with **Black BLOCKS** image data, to refine your selection. Painting with **White REVEALS** the original image.

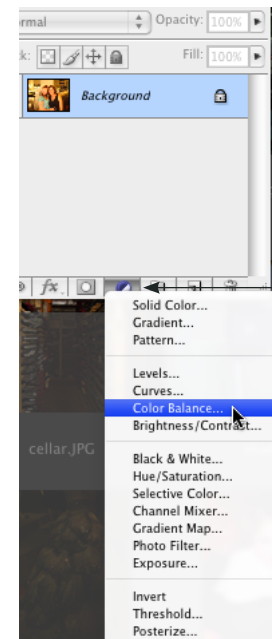
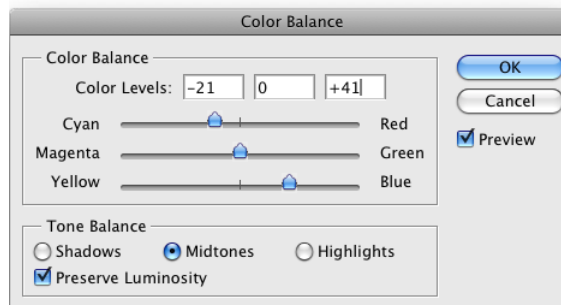
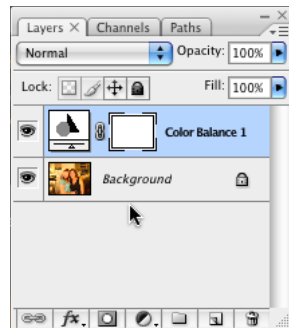
5. If the overall tone looks different than the background image (*too light or too dark*), use **Image > Adjustments > Curves** or **Image > Adjustments > Levels** to lighten or darken the image over all.  
*Note: Before attempting to adjust curves or levels, click on the color layer thumbnail in the panel to affect the image, not the mask.*

## Adjustment Layers

Adjustment layers allow for non-destructive, editable color corrections. They are the safest way to approach image adjustments. Once the Adjustment layer is added, you can see it in the layers panel. If you



1. Click the icon at the bottom of the Layers panel to add a new adjustment layer.
2. Select your adjustment.
3. Double click the adjustment icon in the Layers panel to edit the adjustment.

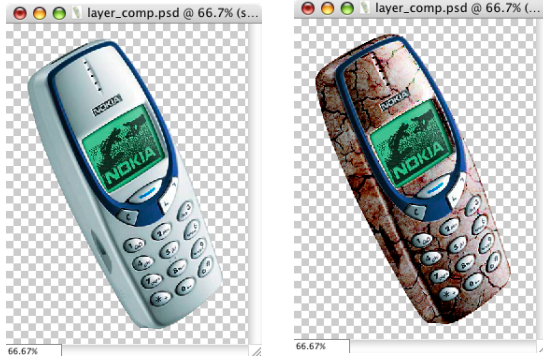


new adjustment layer



## Clipping Mask

1. For applying textures to objects, the **Clipping Mask** feature is a useful tool.



2. Simply drop the texture over the image you want to clip to (*create the texture on a layer above the object*).
3. Then move between the two layers and hold down the **Option** or **Alt** key (*small bubbles will appear, you can also use Layer > Create Clipping Mask, Command Option G or Ctrl Alt G*).
4. Click once and the texture will be clipped to the **non-transparent** areas of the image.

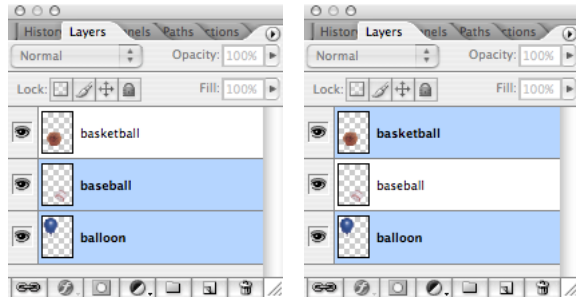




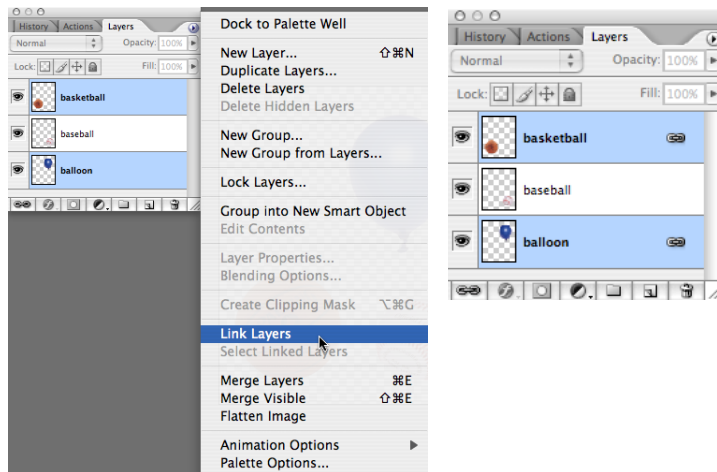
## Linking Layers

Now in the Layers panel, you can use the **Shift** key to select consecutive Layers. To select **non-consecutive** Layers use **Command (Mac)** or **Ctrl (Windows)**.

### Selecting Layers



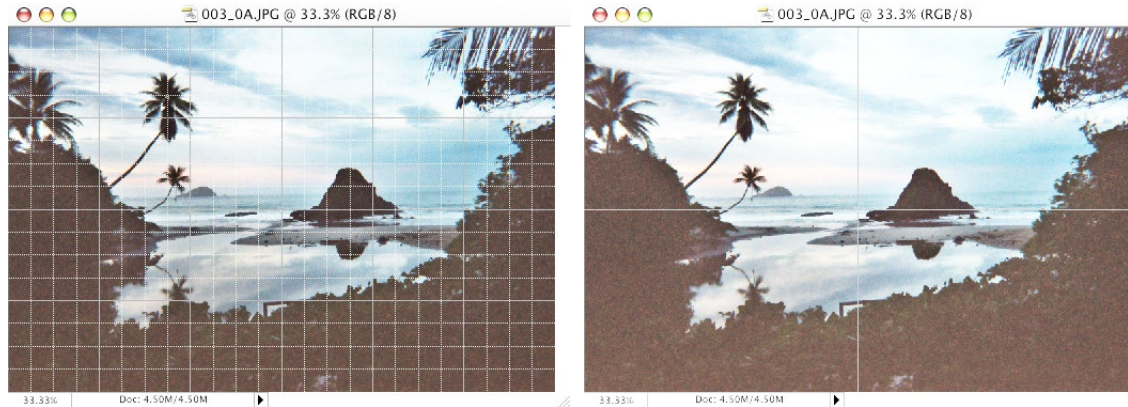
To **Link** layers, select them using the appropriate key or keys, go to the **Layers panel menu** and choose **Link Layers**. You can also use the **Folder icon** at the bottom of the Layers panel to make a **New Folder group**. All items in the Group (or folder) will behave like linked Layers.



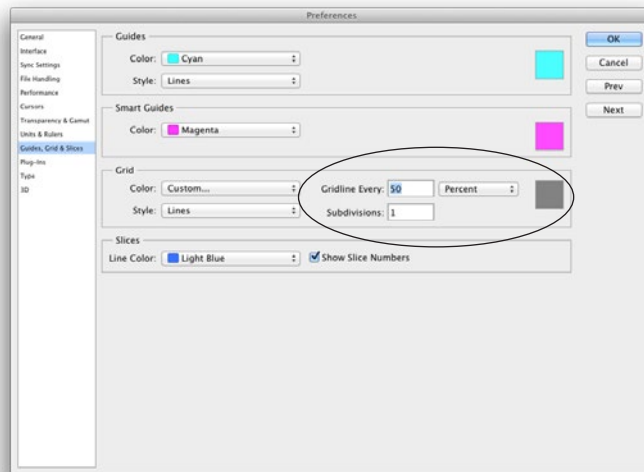
## Grids

There are many circumstances when it is helpful to see the center of a photo, especially if you are Cropping, Adding Borders or Exporting for the Web. A preference can be changed to show the exact center of every image.

1. Turn on your grid through **View > Show > Grid**.

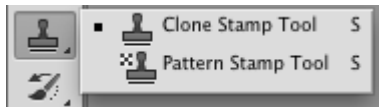


2. Set the scale under **Photoshop > Preferences > Guides, Grid & Slices (Mac)** or **Edit > Preferences > Guides, Grid & Slices (Windows)**.



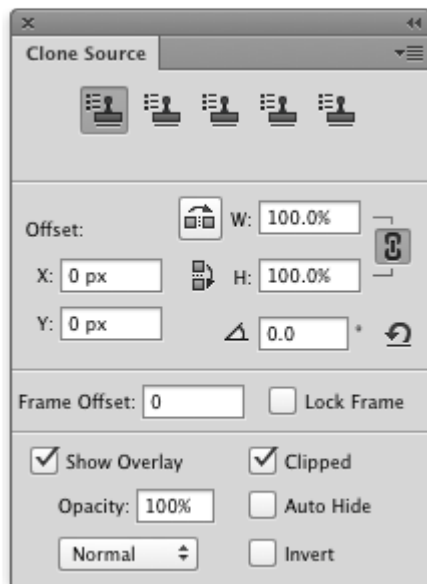
## Clone Stamp Tool

Cloning is still a necessary tool for removing entire objects from photos, or minimizing distracting elements. To clone objects, hold down **option** or **alt** and click your **source point**. Then move **away** from the source and click a 2nd time to repair an area. This will set the distance from where you are cloning to where you are repairing. The **most** important click is your **2nd!**



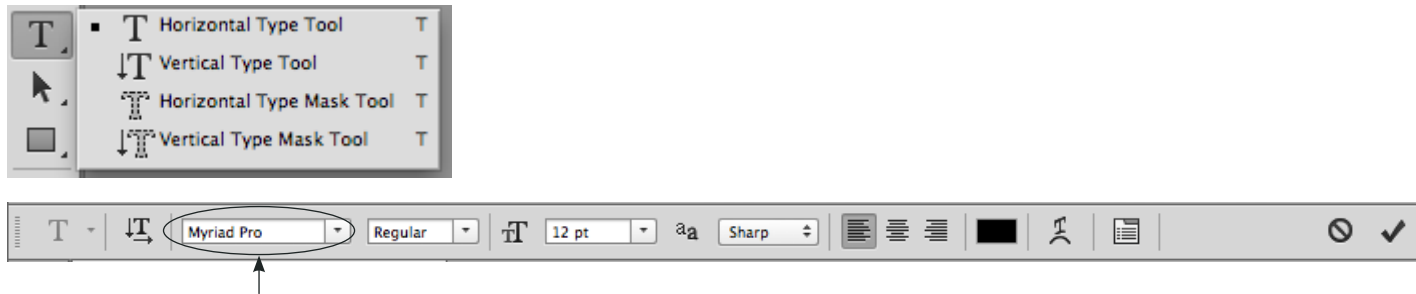
## Clone Source Panel

When using the **Clone Stamp tool (s)**, images can now have up to 5 Clone Sources. There are many options when cloning. You can find this panel under **Window > Clone Source**. To use the Clone Stamp tool you must first **Option** or **Alt** click on the start point, then move your mouse over the area to be corrected—click & drag.



## Type

Working with type in Photoshop used to be frowned upon, today it is a very common task, especially for Web & Mobile designers. Today, Photoshop includes both **Character & Paragraph Styles** for **global** formatting **changes**. When you select your type tool (typically the Horizontal Type tool), you only need to click once on your image to create an area to type. You do not need to click-and-drag to create a text frame, unless you want to wrap paragraph text or constrain your type to a fixed area of the image.



**Tip:** If you click in the font name (not the arrow to the right of the font name) and press the up ↑ or down arrow ↓ on your keyboard (or use the wheel on your mouse) InDesign will change the highlighted text to the next alphabetic font in the list. In essence, this lets you play with the fonts on the selected text until you land on just the right typeface.

## Text Selection Tips

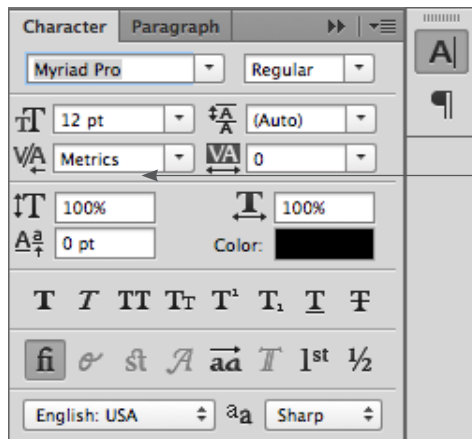
Select a Character .....	Shift right arrow ► or Shift left arrow ◀
Select a Word .....	Double Click
Select a Line .....	3 Clicks or Shift down arrow ▼ & Shift up arrow ▲
Select a Paragraph .....	4 Clicks
Select All .....	5 Clicks or <b>Command A</b>   <b>Ctrl A</b>

## Type Keyboard Shortcuts

Commit to Type Layer .....	<b>Command Return</b> or <b>Ctrl Enter</b>
Increase Text Size by 1 pt .....	<b>Command Shift &gt;</b> or <b>Ctrl Shift &gt;</b>
Decrease Text Size by 1 pt .....	<b>Command Shift &lt;</b> or <b>Ctrl Shift &lt;</b>
Increase Text Size by 5 pt .....	<b>Command Option Shift &gt;</b> or <b>Ctrl Alt Shift &gt;</b>
Decrease Text Size by 5 pt .....	<b>Command Option Shift &lt;</b> or <b>Ctrl Alt Shift &lt;</b>
Align Left .....	<b>Command Shift L</b> or <b>Ctrl Shift L</b>
Align Center .....	<b>Command Shift C</b> or <b>Ctrl Shift C</b>
Align Right .....	<b>Command Shift R</b> or <b>Ctrl Shift R</b>
Justify .....	<b>Command Shift J</b> or <b>Ctrl Shift J</b>
Leading .....	<b>Option up ▲</b> or down arrow ▼ <b>Alt up ▲</b> or down arrow ▼
Kerning/Tracking .....	<b>Option left ◀</b> or right arrow ► <b>Alt left ◀</b> or right arrow ►
Baseline Shift Increase 1 pt .....	<b>Option Shift up arrow ▲</b> or <b>Alt Shift up arrow ▲</b>
Baseline Shift Decrease 1 pt .....	<b>Option Shift down arrow ▼</b> or <b>Alt Shift down arrow ▼</b>
Superscript .....	<b>Command Shift +</b> or <b>Ctrl Shift +</b>
Subscript .....	<b>Command Option Shift +</b> or <b>Ctrl Alt Shift +</b>

## Character Panel

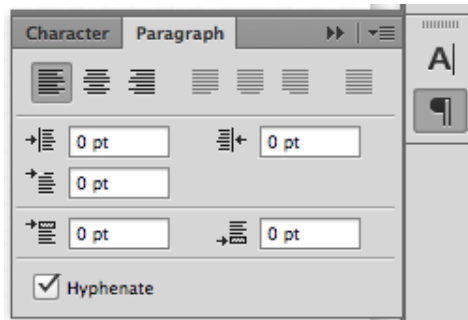
For **Character** formatting choose **Window > Character**. To switch from the **Character** section to the **Paragraph** section of the panel click behind Character (*to the nested Paragraph panel*).



Tip: I always recommend changing the kerning to Optical, for better, more readable text. This can be done in InDesign and Illustrator also.

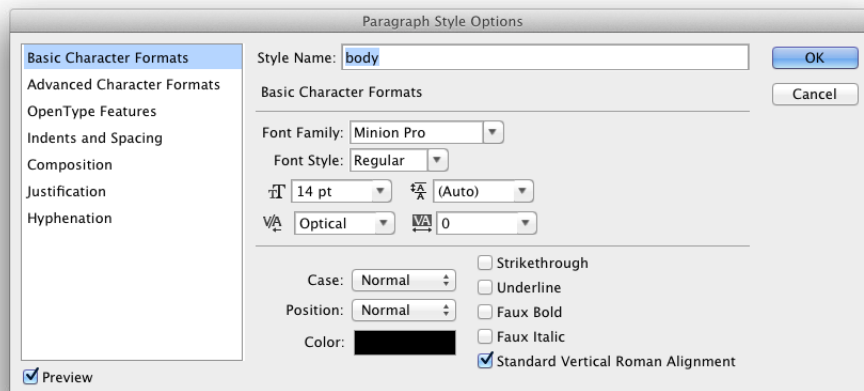
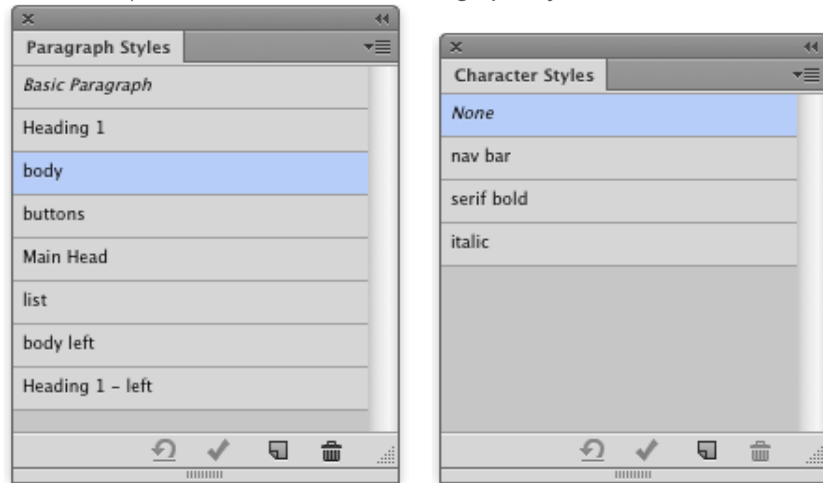
## Paragraph Panel

To change **Paragraph** formatting choose **Window > Paragraph**. To switch from the **Character** section to the **Paragraph** section of the panel click behind Paragraph (*to the nested Character panel*).



## Paragraph & Character Styles

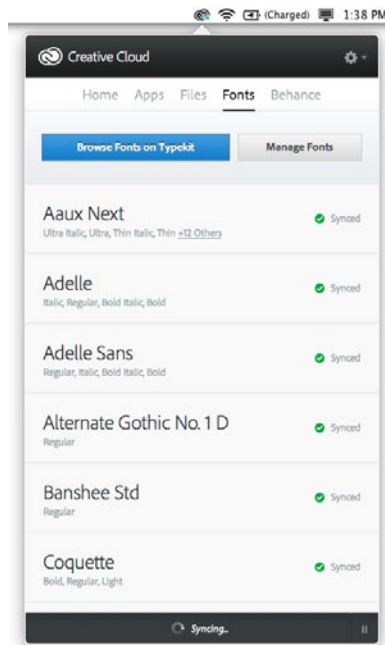
A few versions ago, Adobe added Paragraph & Character Styles for Global Edits. Character styles apply to individual letters or selected words. Paragraph Styles apply to the entire paragraph, up to the hard return (or Enter). You can find these panels under **Window > Paragraph Styles** and **Window > Character Styles**.



When you click the **New button** at the bottom of the Character or **Paragraph Styles** panel you will see the options (*or settings*) for that style.

## More Fonts with Adobe Typekit

If you are a subscriber to the Creative Cloud, you have access to **hundreds** of Desktop fonts and Web fonts through Adobe Typekit. You can go to: **typekit.com** or use your Creative Cloud application icon to find new fonts. The Creative Cloud desktop application is located, on the **Mac**: at the **top right** on your **Menu Bar**, on **Windows**: **lower right** on the **Task Bar**.



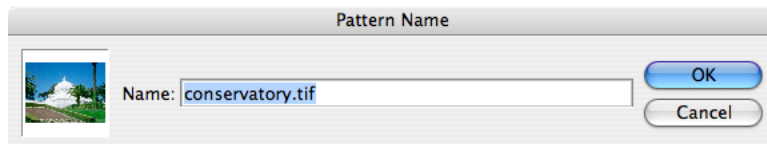


## Type Rising Through an Image

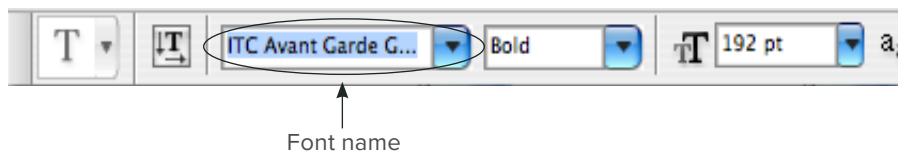
This is an effect you've probably seen many times, making type look like it's embossed in an image or rising up through a photo. There are lots of ways to accomplish this, here is my recommendation.



1. Open an image.
2. Choose **Edit > Define Pattern**, you can leave the name as is or type a new one. The pattern will be used to fill our type and it will be available to apply to other Photoshop documents.




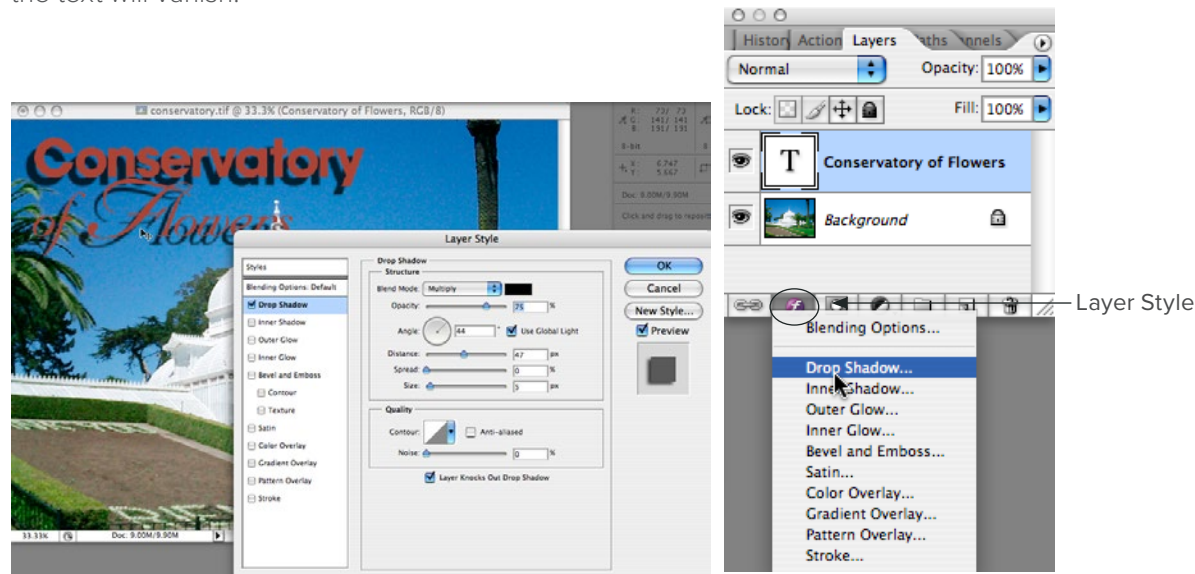
3. Select the **Type tool (T)** and click on the image to enter the text.



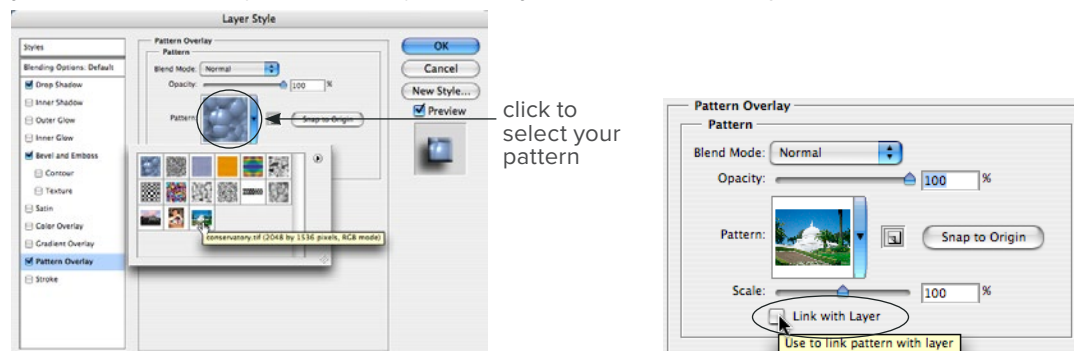
**Tip:** *If you select text, then highlight the font name (instead of clicking on the arrow to the right, click directly on the name) and press the up ↑ or down arrow ↓ on your keyboard Photoshop will change the highlighted text to the next alphabetic font in the list.*

*In essence, this lets you play with the design until you discover the perfect typeface to use. This works on any field in any Adobe application (even dialog boxes). For example, click on the size field and press the up arrow or down arrow key and the type will get bigger or smaller one point at a time.*

4. Go to the **Move tool (V)**  (in order to get out of text entry mode) then click on the **Layer Style** button at the bottom of the Layers panel, choose **Drop Shadow**. The type needs to have an effect applied in order to show up. If you fill the text with a pattern and you don't have a drop shadow or bevel and emboss effect applied, the text will vanish.

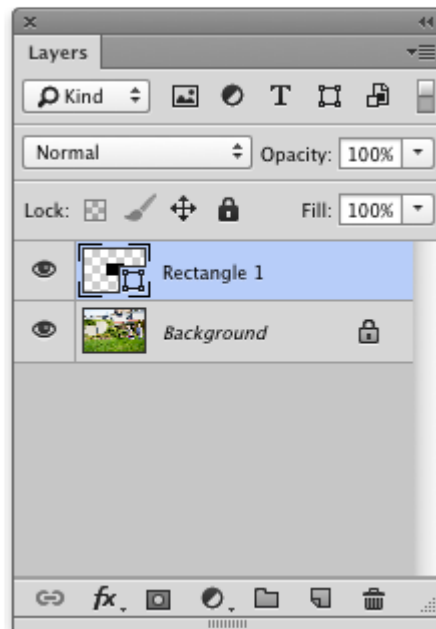
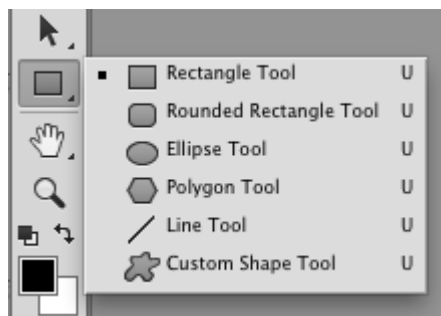


5. Check **Bevel and Emboss** effect, then clicked on the words **Pattern Overlay** (not just the check box). The default pattern is blue bubbles, click the **arrow to the right** of the Pattern icon (the blue bubbles) and choose the image you defined as the pattern in step 2. Finally, **uncheck Link with Layer**.



## Shapes & Paths

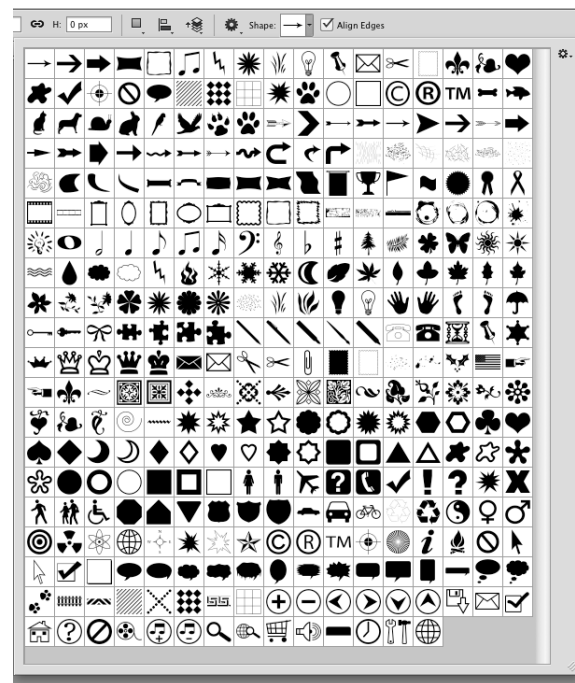
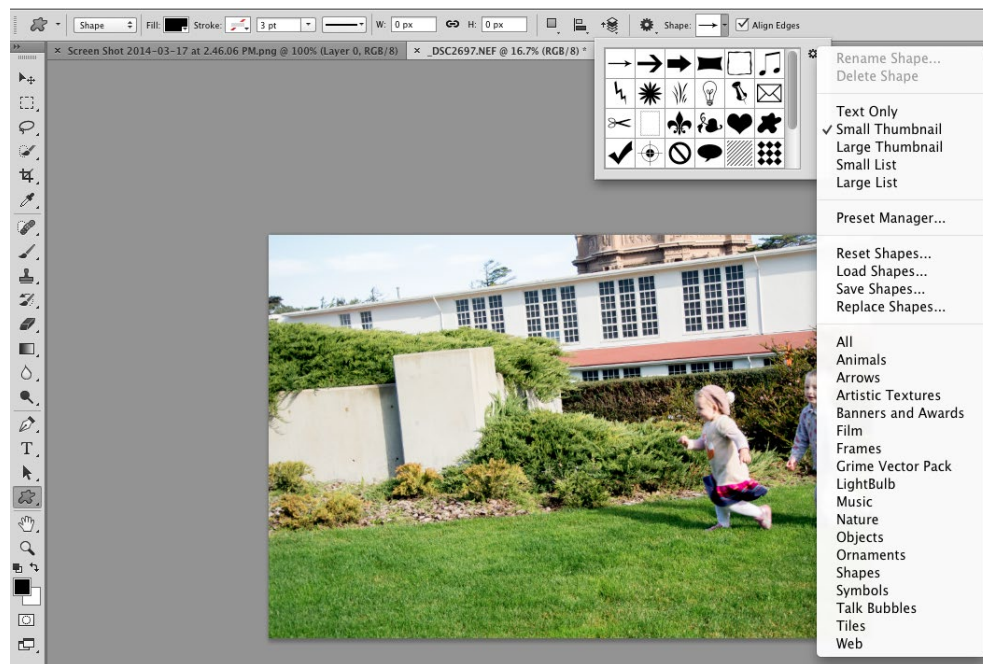
Photoshop has long had the ability to create **Vector paths** with the **Pen tool**. In more recent versions, they've added many simple **Vector Shape tools** and lots of **Custom Shapes**. To choose a Vector shape, click on the Rectangle tool and choose your shape type: Rectangle, Rounded Rectangle, Ellipse, Polygon, Line or Custom Shape.



As you draw the shape you will see that Photoshop automatically creates a Vector Shape layer.

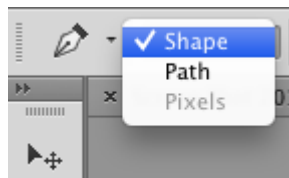
## Custom Shapes

Photoshop has a large selection of custom shapes, that you can access through the **Custom Shape** picker drop down menu. If you choose **All**, then click **Append** (to add the shapes to the end) you will get the full selection.



## Pen Tool

The **Pen tool** is typically to intermediate to cover in an introduction to Photoshop class, but there are some fundamentals you should know about Vector paths. Quick clicks make lines. Clicking and dragging creates anchor points & direction handles to setup a curve. Before you start drawing, choose the type of Layer that you would like to make. The default is **Shape**.



*\* If you create your own shape with the Pen tool, there are three options for what Photoshop will build: Shape, Path or Pixels.*

## History

History is not new, but it is probably one of the most powerful and most under-utilized features in Photoshop. All the steps below can be accomplished using Photoshop 6 and newer. Most people have discovered how to use History to step back several steps, what they aren't aware of is the Keyboard shortcuts for Multiple undos.

**Undo One Step** . . . . . **Command Z** or **Ctrl Z**

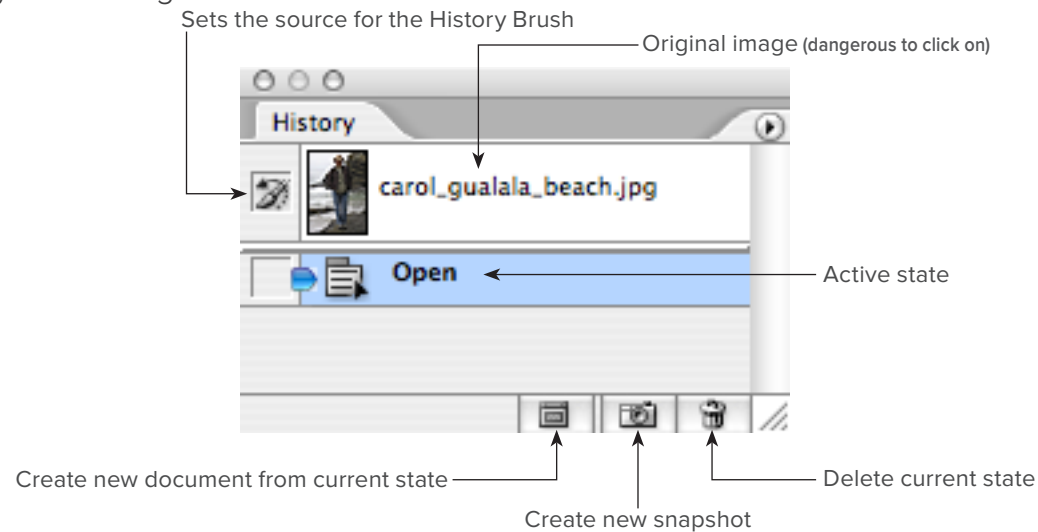
**Redo One Step** . . . . . **Command Z** or **Ctrl Z**

**Multiple Undo** . . . . . **Command Option Z** or **Ctrl Alt Z**

**Multiple Redo** . . . . . **Command Shift Z** or **Ctrl Shift Z**

These shortcuts are found under the **Edit** menu, they are listed as **Step Forward** and **Step Backward**, which moves up and down the History panel. History steps can now be increased up to 1000, the default is 20.

### History Panel Diagram

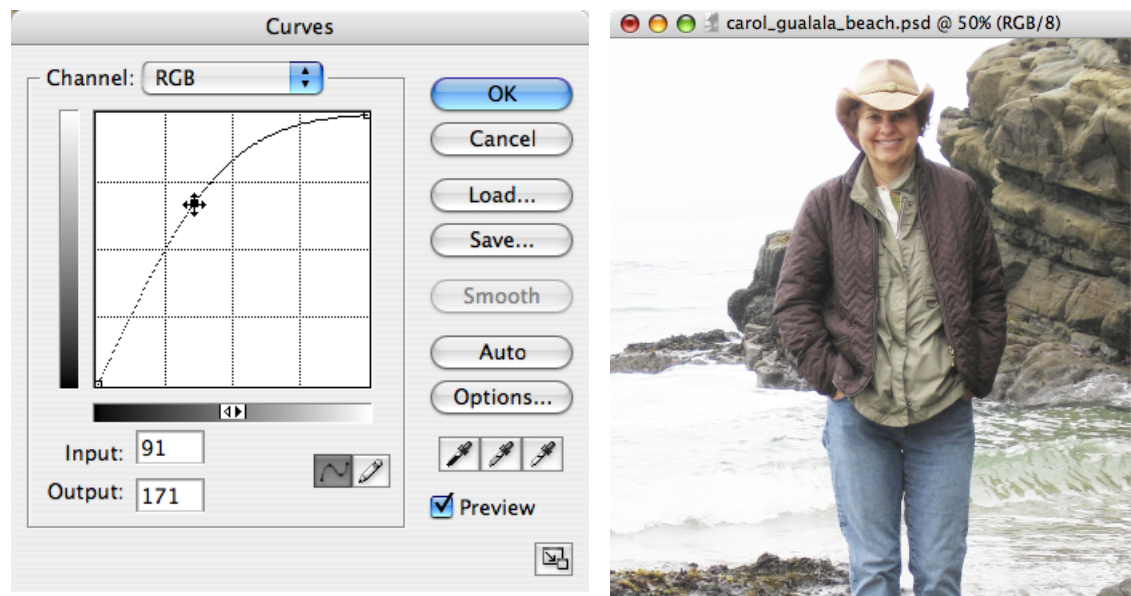




## Using History

We're going to use a technique I call "*painting with the past*". Often, I see people wasting a majority of their time in Photoshop making selections, History makes selections virtually unnecessary. The shot we're correcting has a shadow over the face, we're going to use History to paint in a lighter state.

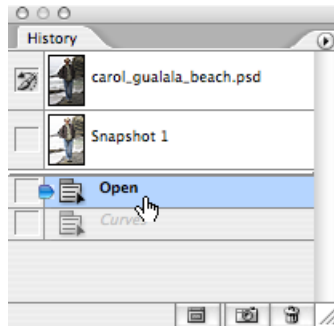
1. Start by opening `carol_gualala_beach.psd`.
2. Choose **Image > Adjustments > Curves** (**Command M** or **Ctrl M**). Pull the **curve slider up** until the entire image is lighter, ignoring that this may be blowing out detail in the background.



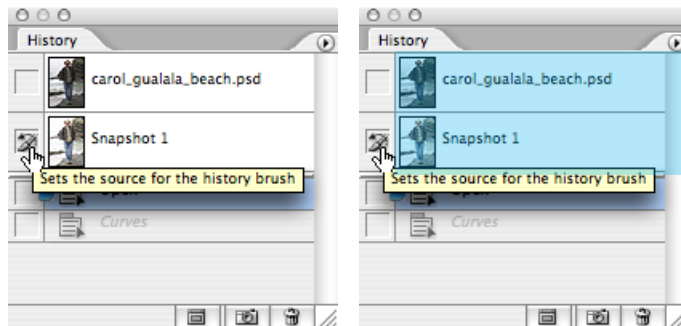
3. At the bottom of the History panel, click the **Create new snapshot** button.



4. In the History panel, **click** on the **Open** state to undo the Curves step (*don't worry, we've got it saved in a snapshot*).

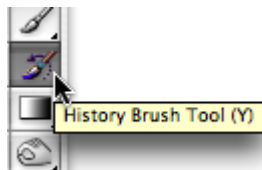


5. Now, click in the **Left Column** next to **Snapshot 1** to **Set the source for the history brush**. This will use what the snapshot looks like to paint changes in the image. If you mess up, you can switch your history brush target back to the original image (the top left column of the History panel).



**Danger zone!** Do not click on the icon or words here, you could loose all your undos.

6. Switch to the **History brush** in the toolbar (*the letter Y on your keyboard will get you there*).





- Paint in the face and it will lighten, you can't go to far (*unlike the dodge tool*). The History brush will only lighten as much as your snapshot.



*Note: When you close your document the History will be lost, it is not savable.*

## Photoshop Filters

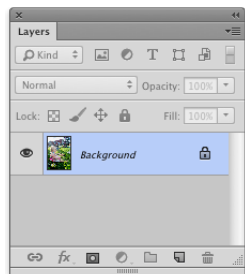
Photoshop Filters are also called **plug-ins** and are located under the **Filter** menu. Some of the most popular filters include:

- Liquify (*I call this the Liposuction tool*)
- Gaussian Blur
- Surface Blur
- UnSharp Mask

## Using Smart Filters

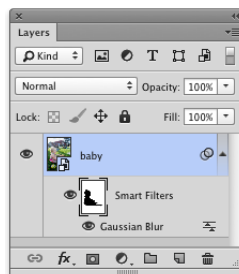
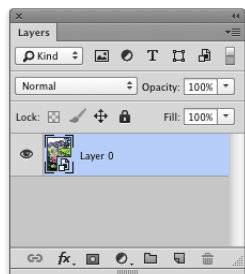
Before running a Filter on a Layer, you should always choose **Filter > Convert For Smart Filters**. This allows non-destructive editing. Meaning, any filter that you run on a Smart Filter Layer stays editable and doesn't permanently affect the pixels.

Once you convert a Layer to a **Smart Filter** (*technically a Smart Object Layer*) you will see a new icon over the Layer thumbnail. Also, when you run a Filter, you will see it applied below the Layer.



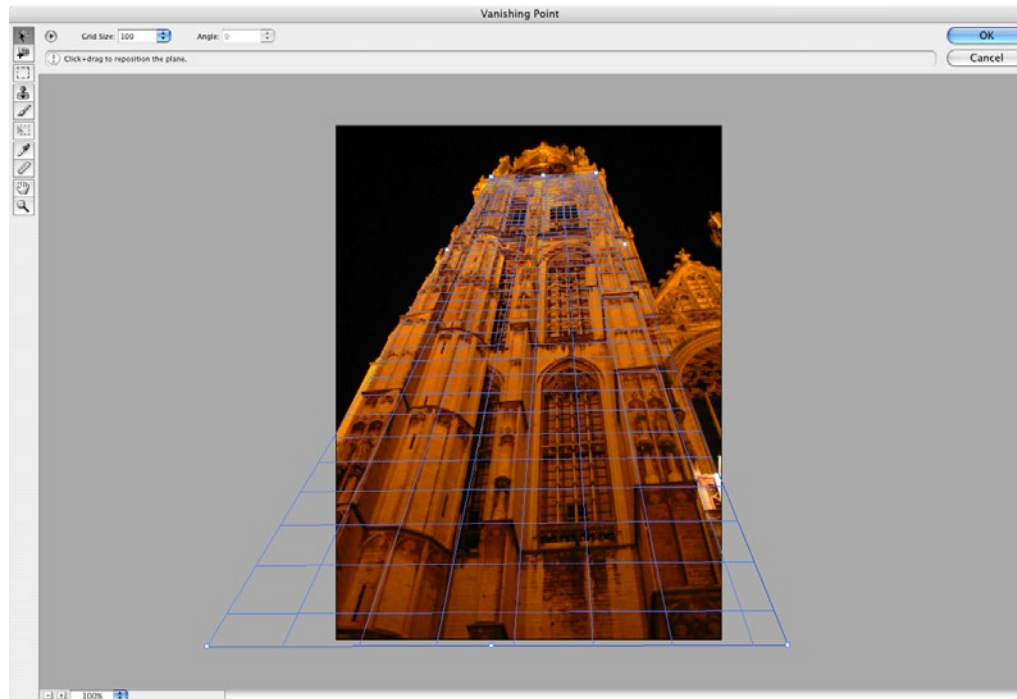
Layer that is a Smart Filter

Smart Filter Layer with Effect Applied



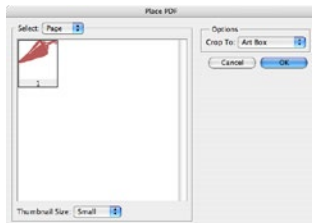
## Vanishing Point Filter

Vanishing Point allows you to paste, clone and paint selected portions of an image while matching the **perspective planes** in the shot. It also is great for packaging or sign mock-ups. To use this **Open** an image and choose **Filter > Vanishing Point (Command Option V or Ctrl Alt V)**.



## Vector Smart Objects

Perform nondestructive transforms of embedded vector and of pixel data. The images that are turned into Smart Objects do not need to travel with the Photoshop file. To create a **Smart Object**, choose **File > Place** and select an AI, EPS or Raster image. You can make a “*protected*” layer and run **editable** filters by choosing **Filter > Convert for Smart Filters**.

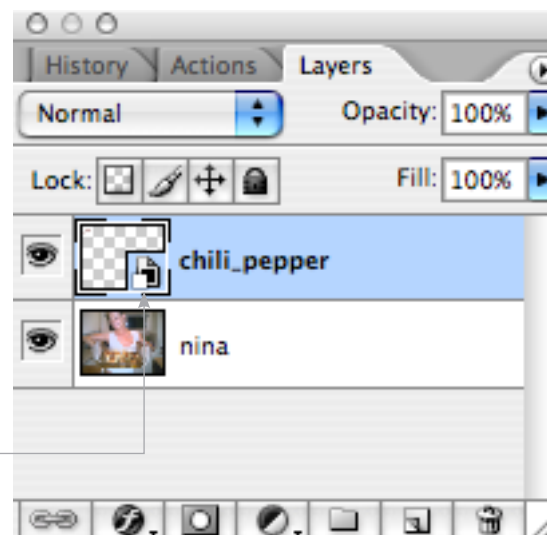


## Placing Smart Objects

When you place you will have to double click to accept the image, it will automatically become a Smart Object.



Smart Object

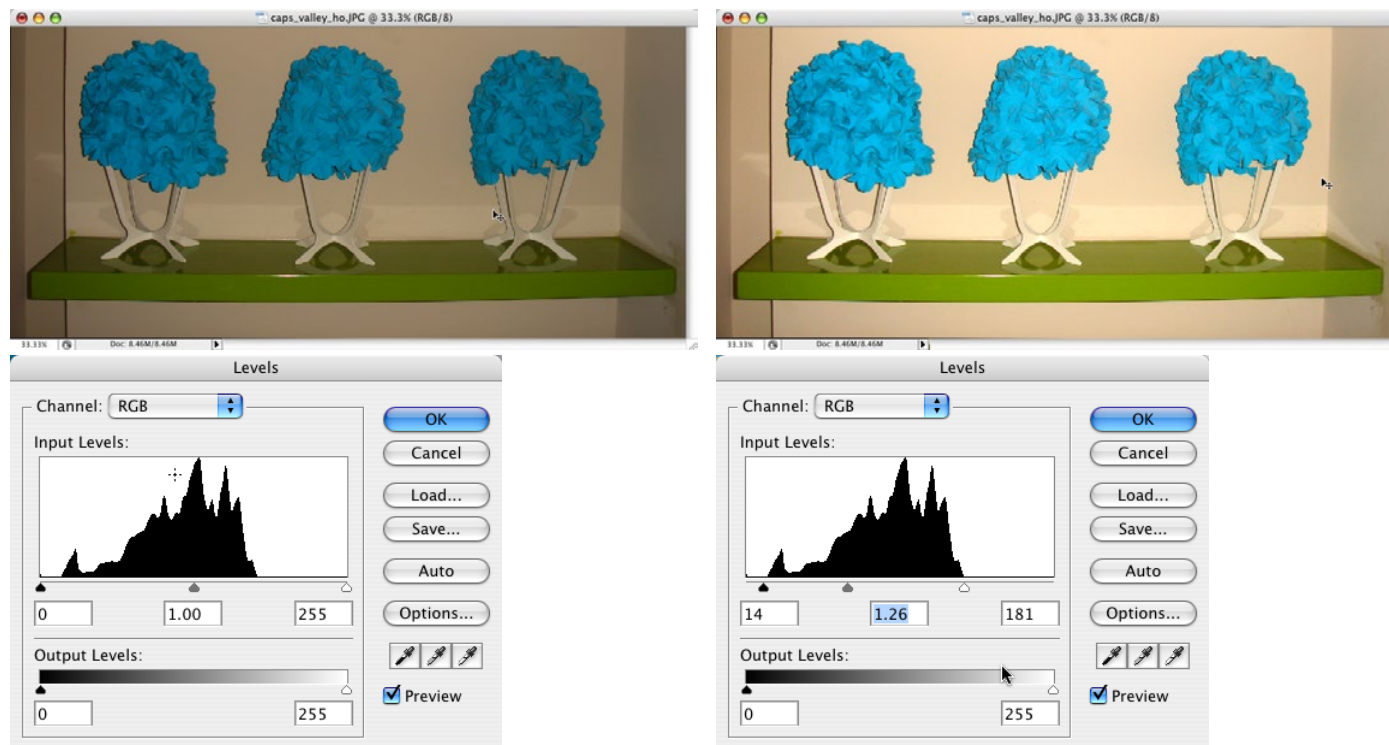


## Curves vs Levels

There are many varying opinions on which is the better tool (*or more powerful tool*) in Photoshop. In my opinion, they both accomplish the same task and **Levels** is an easier & safer tool. Curves is a more powerful (*and more dangerous*) tool.

### Levels Color Correction

Levels has the power to adjust brightness, contrast and tonal range by adjusting the black point, white point and midtones in a histogram.



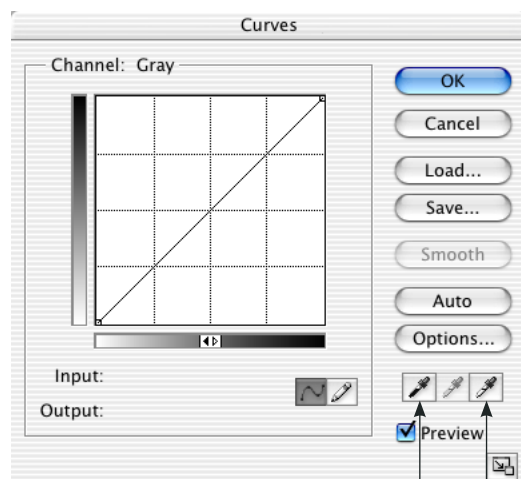
## Curves Color Correction

We will follow the same directions as correcting black & white photos, only this time there will be more numbers.

1. **Open** a color photo.
2. Choose **File > Save As...** add **your initials** to the end.
3. To clean our work area press **Tab** to **Hide All the Palettes** and **Press F** to jump to **Full Screen Mode** with a neutral gray background.
4. Now, bring up your **on-screen densitometer**, the Info palette **Window > Info (F8)**.

### Setting the Defaults

Now we will set our **highlight** and **shadow** values with **Image > Adjustments > Curves (Command M or Ctrl M)**.



set black point

set white point

1. The human eye is well adapted to adjust the color information it receives so that objects we know to be white, appear white, even if in reality objects look yellow under tungsten light, green under fluorescent, etc. In a scanned image or digital camera shot, you will often need to correct objects back to what looks like white, to compensate for their lighting conditions. To do this, **Double click** on the **White Point tool**. Set the values to:

#### Printing Press

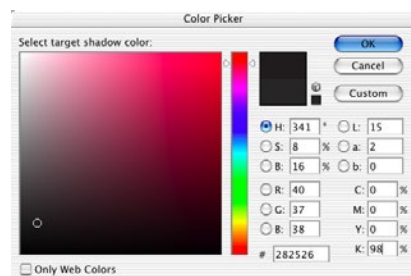
C: 5            or        4  
M: 3                        2  
Y: 3                        2  
K: 0                        0

2. Click **Ok**.
3. **Double click** the **Set Black Point tool** and set the values to:

C: 75            or        70  
M: 70                        65  
Y: 70                        65  
K: 95                        90

*Note:*

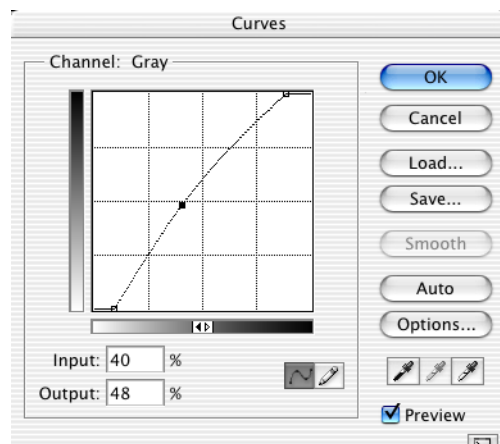
*The 2nd set of numbers for the Black point is for Uncoated paper.*



4. Take the **top right corner (Black point)** of the tone curve and *drag to the left* to find the **lightest spot in the image**. Make a **mental note** of the location and **put** the tone curve **marker back in the top right corner**.
5. Now, drag the **lower left corner (White Point)** of the tone curve **to the right** to find the **darkest spot in the image**.



6. Click once on the **Black Eyedropper tool**, then locate the **darkest spot** in the image using the Info palette (*highest K value, for example 90% K*) and click once.
7. Click once on the **White Eyedropper tool**, then locate the **lightest spot** in the image.
8. Now, if you want to **lighten** or **darken** the image overall, grab the **middle of the curve** and pull **up** or **down**.



9. When you are happy with the image click **Ok**. A dialog box will appear, if this is your first correction, asking you to save the values you entered in the set white point and set black point tools as the defaults. Click **Yes**.



10. If you would like to see a **before** and **after** choose **Edit > Undo**, then **Edit > Redo** (**Command Z** or **Ctrl Z**).
11. Now, clean any scratches, tears, imperfections, or dust using the **Healing brush**, **Patch tool**, **Cloning Stamp** or **Filter > Noise > Dust and Scratches**.

*Note: Dust and Scratches should **never** be used on the whole image. It is best to make a selection first, then run the filter.*



12. The final step is **Filter > Sharpen > Unsharp Mask**.

**Amount = Detail** A range of 50% - 150% is recommended (a higher value will make images very grainy)

**Radius = Contrast** A value of 1.2, 1.4, 1.6 or 1.8 is common, for product shots (*like a refrigerator*) you may go as high as 5.

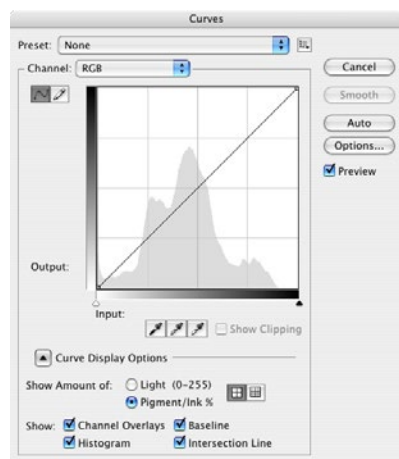
**Threshold = Protection** A value of 0 will sharpen everywhere, a value of 10 will not sharpen within 10 color levels of the surrounding pixels. A range of 1 - 20 is recommended (values vary according to the photo).

13. When you are happy with the file, click **Ok** on Unsharp Mask, then **File > Save**.

## Improved Curves Dialog

The Curves dialog (**Image > Adjustments > Curves**) has been improved several times over the last few versions of Photoshop. Adobe added a histogram on the same grid used to graph the Curve. There's also now a Show Clipping check box, now the Curves clipping display automatically toggles between showing you shadow clipping or a highlight clipping. If you click on the black point dot at the lower left of the Curves window and you'll get a shadow clipping display with everything in the image turning white except where the shadows are being clipped in at least one channel.

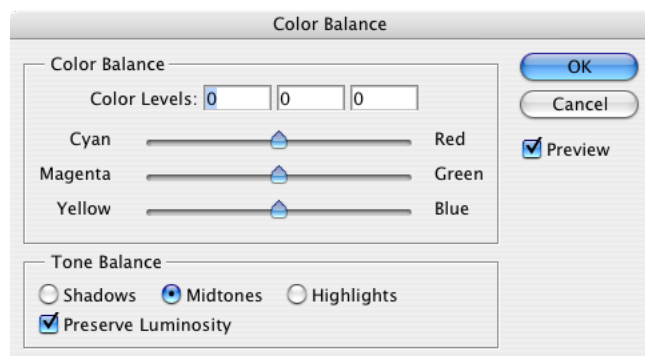
The Curve Display Options button at the bottom of the dialog will let you expand the window to include a number of other useful options. My most often used option is a toggle to let you select whether you want the Curve based on the amount of Light (0-255) or the amount of Pigment/Ink %. When working in RGB it defaults to Levels, but I prefer ink percentages.



## Color Balance

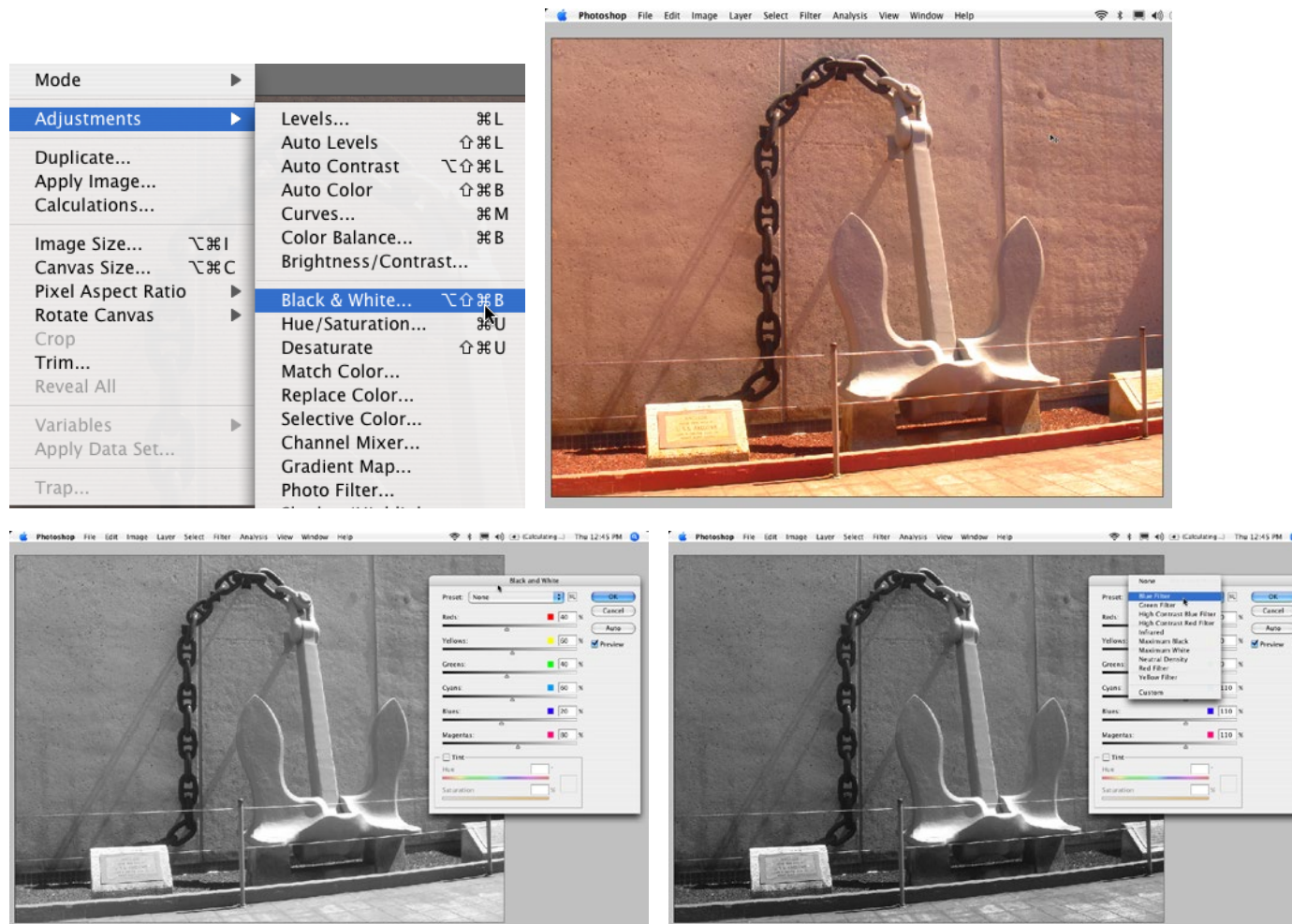
When all color correction has been completed and a dominant color cast still exists in the photo use **Image > Adjustments > Color Balance**. The goal is to try and achieve the formula we worked with earlier in the Highlights and Shadows (or some fraction of this, for example 15, 9, 9 in a highlight instead of 5,3,3):

Highlight	Shadow
C: 5	C: 75
M: 3	M: 70
Y: 3	Y: 70
K: 0	K: 95



## Improved Black and White Adjustment

To make better conversions from Color to Black & White, choose the **Image > Adjustments > Black and White**.



## Match Color

You can take a bad shot and apply the color of a good shot under **Image > Adjustments > Match Color**. Simply open two images and the good color can be applied to the bad image.

