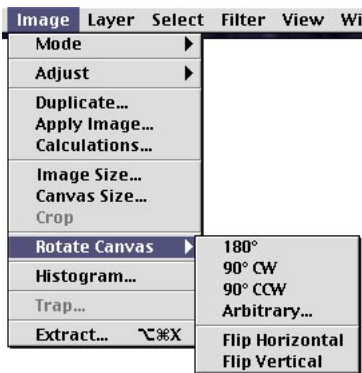


Retouching & Editing

The following steps are useful for images from digital cameras as well as scanned images. Although digital cameras offer much higher resolution and better color reproduction. They still can be prone to pixilation, poor dynamic range, color shifts and poor exposure. Scanners can produce slightly blurry images that suffer from unwanted color shifts. Remember that color correction is often more art than science. But with a few tweaks, you can transform a good image into an knockout image. (Note: Most of these adjustments can be done as adjustment layers - *see Layers*).

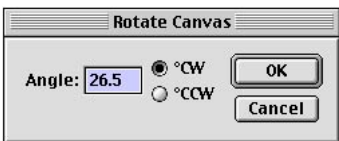
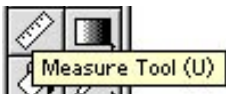


Rotations:

To rotate an image 90 or 180 degrees or flip a scan of a negative horizontally / vertically, choose **Image > Rotate Canvas >...**

For images that are slightly askew, use **Image > Rotate Canvas > Arbitrary**. Rotating more than once in small increments can cause blurring in an image. If you don't get it right use Cmd-Z to Undo.

To ensure that you rotate a small amount correctly, use the **Measurement Tool**. Choose an axis in the image that you want to be vertical or horizontal such as a door or the horizon. Click on one point along the axis with the measurement tool and then drag to another point along the axis and release. To adjust either of the two point, click on them and move them. Next, choose **Image > Rotate Canvas > Arbitrary**, Photoshop will fill in the correct angle of rotation. Click OK.



* **Free Transform (Cmd-T)** can also be used for creative rotations. Holding the shift key will constrain the rotation to 15 degree amounts.



Cropping:

Hit the **C** key on your keyboard or choose the Crop Tool from under the Marquee Tool in the upper left of your Tool box. Click and drag to define the area you wish to be the new canvas size.

To adjust your crop selection, click and drag on any of the **8 bounding boxes** around your selection. Dragging on one of the corner boxes will constrain the proportions as you drag. Hit **ESCAPE** or **RETURN** key to reject or accept the selection to be cropped.

* You can constrain the crop tool to an exact number of pixels through the **options palette**.

** Use **Image > Canvas Size** to crop to a particular number of pixels (e.g. 103 pixels to 100).

Brightness & Contrast:

Never use Image > Adjust > Brightness & Contrast. It brightens *every pixel* in an image a uniform amount resulting in whites that are blown out or darks that are muddied. Using Levels and Curves, images can be adjusted across a select range of pixels such as the light or dark range. Levels are easy to use. Curves require a bit more practice.

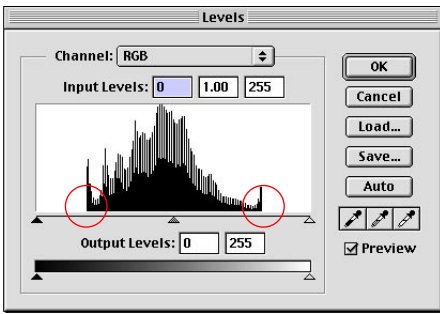
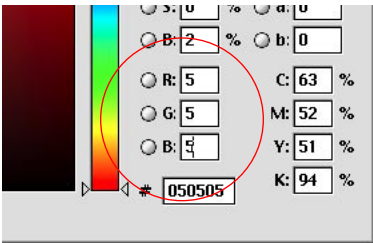


Image > Adjust > Levels (Cmd-L) allows you to adjust three points, black, white and the middle point known as gamma. The histogram in Levels shows the distribution of pixels in the image. It looks as if someone took the pixels out of the image and stacked them up each value on the floor. The highest peak represents the greatest number of pixels in the image.

Drag the white point marker to the left until it reaches the beginning of the curve of the histogram. Do the same for the black. To lighten the image overall, drag the gamma marker to the left.

* To see how your image will look on a PC, slide the gamma marker over until it reads **1.2**



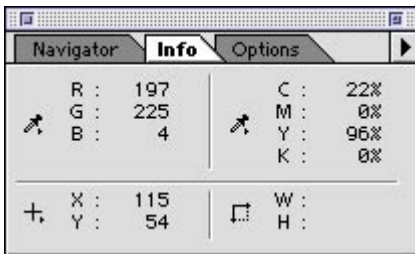
One Stop Color Adjustment and Levels:

To adjust the white and black points based on pixels within the image, use the eyedropper tools in Levels. This not only adjust the levels in the image, it can also colour correct.



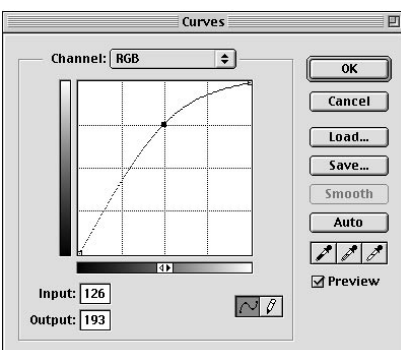
To ensure that the blackest areas of the image are not oversaturated or the white point blown out, first set their values. Begin by **double clicking the black eyedropper** to bring up the Color Picker. **Set the R, G and B values to 5.** 5 prints black without ink oversaturation. Click OK and with the black eyedropper selected, choose the darkest spot in the image. You can sample more than once if the image colour shifts noticeably.

Double click the white eyedropper setting the RGB values to **250**. Then select the area in the image that you wish to read as white. Be careful to choose the right area so that you don't blow out the white point.

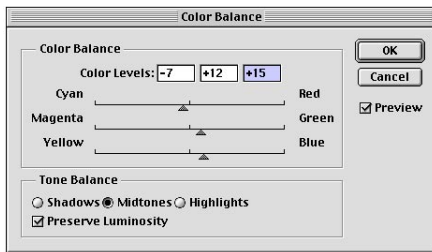


As stated before there are no hard and fast rules for judging, it is more art than science. Sometimes you have to make a trade off between overexposing one area of an image to lighten the rest.

* Watch the info palette as you hover over the image with the eyedropper, any pixel that registers 0 is black, 255 is white. If the three values of RGB are not relatively similar, then that pixel has a color cast.



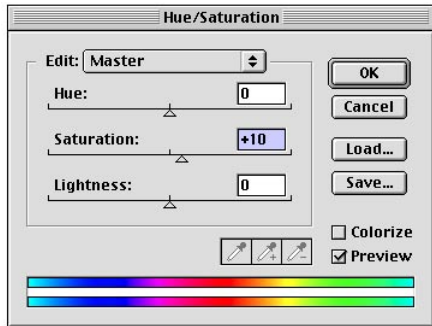
Curves, Image > Adjust Curves (Cmd-M), work in a similar way to Levels but allow you to create and tweak multiple points rather than 3 offered by Levels.



Color Correction:

Many scanners add a slight color cast to your image. Color Balance and Hue Saturation allow you to color correct the image.

Using **Image > Adjust Color Balance (Cmd-B)**, adjust the highlights and mid-tones of your image. If the white point is too red, slide the balance point to its opposite Cyan. Repeat for the mid-tones. Usually a shift of plus or minus in the 0 to 10 range will do the trick. Make sure that Preview is checked and click OK when you have made the necessary adjustments.



Most inkjet drivers are set to print a vibrant saturated image. But if you feel your image is undersaturated use **Image > Adjust > Hue Saturation (Cmd - U)**. Slide the Saturation point to the right to saturate the image. As we said before your eye is the best judge, and you may need to correct the image after you see the results on your printer.

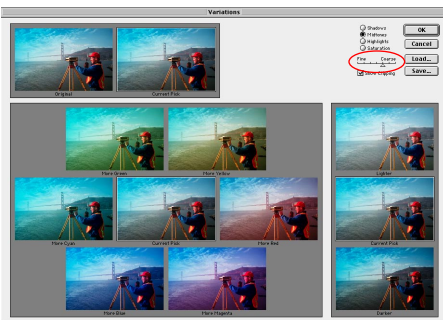
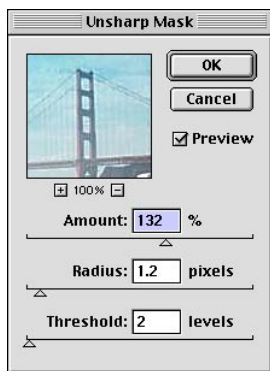


Image > Adjust > Variations appeals to artists because of its visual approach. Click on the image that looks best on the color wheel to adjust the central image. Be sure to set the amount on the adjustment scale to the **first or second notch** above Fine.

* Tint a black and white image by switching to RGB mode, then choose **Image > Adjust > Hue / Saturation**. Click the **colorize** check box. Slide the Hue and saturation sliders to adjust.



Sharpening:

Use **Filter > Sharpen > Unsharp Mask** to sharpen the image. For web images, an **amount of 60 to 100%, radius of around 1 and threshold of 3** usually does the trick. If you need to go above 200%, you may need to rescan. The larger the image, the larger the radius setting. If the image starts to show signs of color noise when sharpening, **increase threshold**. You will also need to **increase amount** correspondingly. (web settings:100,1,3)

Spot Removal:

Use the Rubber Stamp tool to sample one area in an image and paint it elsewhere, great for removing dust and scratches. **Option click** on the area you wish to sample and then **click and paint** in another area. Watch the crosshair to keep track of where you are sampling and thus avoid mistakes. Sample often to avoid mirroring areas of the image. Option click, paint, repeat.



Filter > Noise > Despeckle, or **Dust and Scratches** are great for cleaning up noise, but can blur the image.

Although you can do a lot to clean up an image, **it's always better to start with a good image.**