

Creating Digital Images

Before each session

Clean the glass in a side-to-side motion with a static-free cloth designed for cleaning eyeglasses or monitor screens. NEVER use household chemical cleaners such as Windex or Pledge. (You can buy these cloths at optical shops and photo shops.)

Examine your original photograph or document for anything that might harm the glass, such as staples, tape, or glue. If necessary, put the photo or document inside a clear plastic sleeve for scanning.

Check your computer's available disk space for sufficient space to scan and edit the image or images.

For Each Scan

Keep the glass clean. Keep your fingers/paws/feet/keys/cat/dog/hamster/grandchildren off the scanner glass. To avoid getting fingerprints on the scanner glass, wear lightweight cotton gloves (available at drug stores and photo stores). This will also keep fingerprints off your photos and fragile documents.

Check the photo or slide for dirt and smudges. If they need cleaning, use a solution such as PEC-12, or another archival photographic emulsion cleaner. Use it carefully and sparingly, and test it on the border of the original (or a similar print or slide) before continuing. If the cleaner sticks to the emulsion, stop immediately. If you use compressed air such as Dust Off, do it from a distance of about a foot, to avoid getting propellant on the original. It's best to test any cleaning method on a similar print that doesn't matter, or on a tiny border area of the print. It may be easier to retouch the scanned image of the photo than to clean the image, in some cases. You might not be able to remove all those peanut-butter fingerprints from the photo without damaging it; better to resign yourself to retouching some images rather than damaging the originals.

Position the photo/document on the scanner; make sure that it is not so close to the edges that part of the original will be cut off. Although you can straighten the image later, the process is smoother if you position it correctly at this point.

Specify the type of scan. Is it line art? A color photograph? Black-and-white photograph? Magazine or newspaper photo? Color slide or transparency (some scanners)? Select the appropriate scan type and test it.

Select the resolution. How many dots per inch are appropriate? Consider the final use of the scan – is it for an archive, or is it to make an image you can email? Balance the value of the image with your purpose in scanning it and the size of the file.

Preview the image, if your scanner software allows this (most do). Is it straight? Is part of the image cut off at the edges? Does the glass need cleaning? Does the photograph or slide need more cleaning?

Crop the previewed image so that you eliminate scanned areas that are not part of the image. For archiving purposes, you should not crop the photo itself at this point (in other words, at this point don't crop out Uncle Arthur even if you didn't like him), but you should crop the scanned area so that all you are scanning is the photograph.

Check the file size. Using the resolution you have set, most programs can tell you at this point the approximate size of the file you will be creating when you scan. This is the time to make sure you are not creating a 33-megabyte file that will crash your computer. You can change the size of the image and change the resolution at this point to create a file that is of manageable size.

Scan the original. This shouldn't take too long. Pet the cat or change the music on your CD while you're waiting.

Examine the scanned image. Before you go any further, decide if this image looks like what it should look like. Make any additional necessary changes in scanning settings at this point and rescan the original before you spend time editing it and saving it in various formats. Rescan if necessary.

Editing Digital Images

Saving and Storing

Save an archive copy. If you have created an archive copy of the original, save it as a **.tif** or **.png** file. Do not edit archive copies – save them someplace safe, document them (see the last page of this handout), and resist the urge to fix them. The archived image should be as close as possible to the original that you scanned, even if that original needs considerable cleaning and editing. By creating an archive copy, you are creating a virtually identical copy of the source document that (you hope) will outlast the original. You will have ample opportunity to edit and fix another copy of the image for your own use, but don't edit the archive copy.

Make a copy of this archive file if you want to edit the image. Save it with a different file name, so that you don't accidentally overwrite your archived copy of the original.

Store the archive copies on storage media separate from your hard drive. Back up image files on your hard drive often, to avoid losing work you have spent in editing images.

Steps in Editing Digital Images

Crop the image. Try cropping in more tightly on the focus of the photo. Not only does this usually give the image greater impact, but it also saves on pixels and, thus, on disk space.

Fix defects in the image. Before you fix other aspects of the photo, repair imperfections in the image resulting from dust in the photo emulsion, hair, scratches, water damage, peanut-butter smudges, etc. It is helpful to make these corrections at this stage, because later they may become magnified through other changes you make, and thus may be more difficult to fix. You will probably want to zoom in on the photo to a pixel level to make many of these corrections.

- ❖ **Dust and Speckles:** Set Radius and Threshold at minimum levels (1 pixel), increase to find the minimum levels at which the flaws disappear. For a photo with many speckles, some programs have a global dust/speckle replacement filter. This may decrease image sharpness, however, so use judiciously. Fix larger speckles by isolating them individually.
- ❖ **Hairs, tears, creases:** Repair with a “cloning” tool.
- ❖ **Large blotches and spots:** Repair with “cloning” tool and similar tools available in different programs, such as a “smudge” tool.
- ❖ **Red-eye:** Many programs have red-eye replacement, which allows you to replace the red-eye with copies of existing colors in the image, or with colors you choose. Sometimes the red-eye will completely obscure the actual eye color, and you will need to verify eye color from someone who knows the color of the subject’s eyes.
- ❖ **Missing elements:** Try various tools to find those that work best. One particularly difficult thing to fix in a photo is large reflected areas on eyeglasses, resulting from the eyeglasses reflecting light from a flashbulb. Also, blotches on faces or other body parts that need to be fixed with considerable care and patience, since you must basically recreate large or significant portions of the image. You may need to experiment and use several correction tools to fix the image in a way that makes it appear natural.
- ❖ **Changing backgrounds:** For some images, you may want to isolate the central images and mute the background or delete it entirely. In lower-end programs, this will require you to use “paint” or “clone” tools over the entire background. Some programs, however, allow you to change the background completely, once you isolate the part of the overall image which you wish to retain. While deleting backgrounds can remove important information from the image, it may be desirable for a framed photo. Thus, while it is not something a genealogical purist would endorse, it is something many people want to be able to do. In any case, never do this to your archived original!

Balance the color. It is not unusual for a photograph to take on a decidedly red cast, which can be fixed readily in most image editing programs.

- ❖ **Beginning:** Different programs' approaches to fixing the overall color balance vary, but many programs allow you to preview what the image will look like if you add more blue, more cyan, more red. They may also let you revert to your original, if your experimenting doesn't work as well as you would like.
- ❖ **Advanced:** (1) Calibrate your monitor according to the image-editing software manufacturer's instructions, so that the colors displayed on your screen will be closer to the image's "true" colors. (2) View the image at full-size (100%) to assess the need for color correction. (3) Use a histogram that shows the distribution of tones in the image by graphing the number of pixels at each color intensity level. This shows whether the image contains enough detail in the shadows (left part of the histogram), midtones (middle), and highlights (right part) to allow for a good correction. Remember these "opposites":
 - Cyan – Red
 - Magenta – Green
 - Yellow – Blue

Having examined the histograms, do not be shy about letting the program reset the color levels automatically. You can always redo it yourself if you want to.

Correct Brightness, Contrast and Intensity. This can be done using automatic corrections or manually. To save yourself time, you may want to try the automatic correction first. If you are not pleased with the result, adjust the manual settings.

Some programs allow you to correct the "color cast" by selecting an area of the image that should be black, white, or gray. Using this correction tool can result in an immediate, dramatic improvement of the overall color effects and may be the only color correction you need to use.

- ❖ **Beginning:** Use the "brightness" and "contrast" settings, automatic and manual. Try automatic color saturation and hue enhancement adjustments, or adjust them manually (but carefully – a little goes a long way).
- ❖ **Advanced:** You can try this if you have an image-editing program such as Photo-Paint, Paint Shop Pro, Photoshop Elements, or PhotoImpact, all of which support this feature. Copy the image and turn it into a separate layer that you then superimpose over the existing image. This will enhance the richness of colors. If you need additional richness, copy and superimpose an additional layer.

Sharpen the Image. Sharp, clear images do not need this step. However, many snapshots have fuzzy images that are improved with edge-enhancement and sharpening.

- ❖ **Beginning:** Use a global "sharpen" tools incrementally until image is clearer; most images, even blurry ones, very little sharpening.
- ❖ **Advanced:** Use a "sharpen edge" filter (global or specific) to enhance edges; use the global "sharpen" filter or "unmask" filter tool sparingly.

Free! Free! Free! Free! Free! Free! Free!

Digital Image Editing Programs

<http://graphicssoft.about.com/compute/graphicssoft/cs/imagemgmtfreepc/index.htm>

Irfan View 32 (Windows) – Also creates catalog

ArchImage (Windows)

Iindex (Windows)

<http://graphicssoft.about.com/compute/graphicssoft/cs/freephotoswpc/index.htm>

Image Enhance

Photo Wizard

Digital Image Catalog Programs

<http://graphicssoft.about.com/compute/graphicssoft/cs/imagemgmtfreepc/index.htm>

Irfan View 32 (Windows) – Also edits images

ArchImage (Windows)

Iindex (Windows)

“Photo Album” and Slide Show Program

<http://graphicssoft.about.com/compute/graphicssoft/cs/photoalbumsoftware/index.htm>

Adobe ActiveShare (Windows; many ads; avoid “More Projects” button!)

CD Program

<http://graphicssoft.about.com/compute/graphicssoft/cs/imagemgmtfreepc/index.htm>

CDView (Windows)

Slide Show Programs

http://graphicssoft.about.com/compute/graphicssoft/cs/imagemgmtfreepc/index_2.htm

PictureSlideShow (Windows)

SlowView (Windows)

Links to Software and Tips for Image Processing

<http://graphicssoft.about.com/compute/graphicssoft/cs/digitalimaging/index.htm>