
Using Photoshop CS3

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Set Up

- Select **Window->Workspace->MyWorkspace** if you have created your own workspace (named MyWorkspace) or follow these steps.
 - Select **Window->Workspace->Default Workspace**.
 - Remove the Color Swatches panel.
 - Select the Histogram panel so it is showing.
 - Select **Window->Workspace->Save Workspace**.
- Select **Edit->Preferences->General**.
 - Check **Beep When Done**. If you perform tasks that take a long time, such as some of the automation and script capabilities on the **File** menu, you may find this useful; otherwise, it might be annoying
- Select **Edit->Preferences->File handling**.
 - Change **Maximize PSD and PSB File Compatibility** from **Ask** to **Always**.
- Select **Edit->Preferences->Cursors**.
 - Set **Painting Cursors** to **Normal Brush Tip**.
 - Check **Show Crosshair in Brush Tip**.
 - Set **Other Cursors** to **Precise**. The standard cursors are easier to see against a dark background and have a cross to show precisely where they are operating, so this may or may not be useful.
- Select **Edit->Preferences->Units & Rulers**.
 - Set **Units, Rulers** to **inches**.
- Select **Edit->Color Settings**.
 - Change **Workspaces->RGB** to **sRGB**. Set this to the color space that will be used when you print the images; otherwise, the printer may change some colors that are available in your color space but not in its color space. For commercial printing use sRGB.
 - Change **Color Management Policies->RGB** to **Convert to Working RGB**.
 - In **Color Management Policies**, uncheck the boxes for asking about mismatched profiles.
 - In **Color Management Policies**, uncheck the box for asking about missing profiles.

Workflow

In Photoshop, you generally want to fix the biggest problem first, and you want to avoid making destructive changes (changes that cannot be undone after the file is saved). Whenever possible, each change should be made in a separate layer in Photoshop. This makes it easier to revisit individual changes at a later time.

Editing an image in the following order is a reasonable workflow:

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- **Preserve the original** – Make a copy of the original so you can start over or make more than one version of the image from the same original.
 - **Convert image to PSD file** – The PSD format is the native format for Photoshop, so it has support for all of Photoshop's capabilities. For example, PSD files can store an image with multiple layers, but a JPEG file cannot.
 - **Straighten and crop** – This is a destructive step, but you probably will not want a version of the image that has not been straightened, so you will not need to undo this step. You can also crop out any part of the image that you are certain you will never want, but postpone artistic cropping and cropping to change the aspect ratio until later.
 - **Make adjustments to the image** – Making each change in a separate adjustment layer makes it easy to go back and see exactly what was done to the image and alter the changes is needed.
 - Fix biggest problems first. If there is a big problem with the image, you may want to fix that before making the overall adjustments since it may affect the other adjustments.
 - Otherwise, make overall adjustments before local changes.
 - **Layer->New Adjustment Layer->Exposure**
 - **Layer->New Adjustment Layer->Levels**
 - **Layer->New Adjustment Layer->Curves**
 - **Layer->New Adjustment Layer->Color Balance**
 - **Perform spotting**
 - **Perform retouching**
 - **Apply creative effects**
 - **Save as PSD file** – Up to this point, the changes have been non-destructive. The PSD file format can preserve the changes that have been made so far so they can be undone or modified even after the file has been saved.

From this point forward, the changes that will be made will be destructive and cannot be undone; therefore, it is important not to overwrite the file that is saved in this step. One way to do this is to duplicate the image by selecting **Image->Duplicate**. This will make an exact copy the current image except the file name will be appended with “copy”, which can be seen in the title bar.
 - **Flatten image** – The steps from this point forward must be performed on a flattened image (that is, no layers).
 - **Adjust composition** – Crop the image to remove extraneous area and change to the desired aspect ratio. This step is performed after the image has been edited in case you want to print different compositions of the image (e.g., 4x6 and 8x10).
 - **Change image size** – Resample the image to the pixel density needed for printing (e.g., 8”x10” and 300 ppi). If this step is not performed, it will be performed automatically by the printer; however, sharpening is only effective if it is done after resampling so it is better to resample the image in Photoshop.
 - **Sharpen image** – This step should be performed after the image as been resampled to its final image size.

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- **Save as JPEG file** – Do NOT overwrite the PSD file that was saved above. This is the point to save the exact image that will be printed. Since the image no longer contains information unique to Photoshop, a high quality JPEG file is a good choice; the `jpg` suffix will prevent overwriting the image saved earlier and the file will be compressed to use less space.

When saving the final JPEG file, it can be useful to incorporate the aspect ratio (e.g., “8x10”) and sharpening parameters (e.g., “85.1.4”) into the name of the file.

OriginalImageName-8x10-85.1.4.jpg

- **Print**

Now you should have three separate image files: 1) the original JPEG or raw file that came from the camera without any changes, 2) the PSD file with the non-destructive changes saved in separate adjustment layers, and 3) the JPEG file that is ready to print, which incorporates any destructive changes.

Note: Every time a JPEG file is saved, it is compressed, which loses a little of the data in the image. If a JPEG file is saved over-and-over, it will eventually lose enough data that the image will degrade. In the workflow above, the image was saved twice as a JPEG file: the original image saved by the camera and the JPEG file used for printing. If high quality settings (low compression) are used when saving a JPEG file, saving it two times will not cause enough degradation of the image to be noticeable.

Opening JPEG in Camera Raw

You can open a JPEG file as if it is a raw file in either Photoshop or Bridge. This will allow you to make non-destructive edits, such as cropping, to JPEG files.

To open a JPEG file in Camera Raw from Photoshop:

- Open Photoshop.
- In Photoshop, select **File->Open As**.
- In the Open As dialog box that pops up, navigate to the file you want to open in raw mode, and select the file in the **File name** field.
- In the **Open As** field, select **Camera Raw**.
- Select **Open**.

To open a JPEG file in Camera Raw from Bridge:

- Open Bridge.
- Navigate to show the images you want to work with as you normally would, then select the file(s) you want to edit in camera raw.
- Select **File->Open in Camera Raw**.

Composition

Align Horizon

- Select the Ruler tool. The Ruler tool is on the same icon as the Eyedropper tool, so press **Shift-I** until the icon changes to the ruler icon.

- Click on one end of the horizon and drag a line to the other end. Continue to click and drag on the ends of the line to reposition until it is positioned correctly.
- Select **Image->Rotate Canvas->Arbitrary**. Then, select **OK**.

Crop Image

- Turn off **View->Snap To->Grid**.
- Select the Crop tool by pressing the **C** key.
- By pressing the shift key while selecting the area to crop, the image proportions will stay constant.

Change Image Size

When resizing a 35mm (2x3 or 4x6) image for printing, cropping for 8x10 makes the image more square, and 5x7 and 3x5 make the image less square (longer and thinner).

- 8x10 Crops the image by shortening the long side.
- 5x7 Crops the image by shortening the short side (a small amount).
- 3x5 Crops the image by shortening the short side.

Picture Size	Frame Size
4x6	8x10
5x7	8x10
8x10	11x14
11x14	16x20
16x20	22x28
20x30	

- Select **Image>Image Size**.
- When resampling an image, use **Bicubic Sharper** when reducing the size of the image and use **Bicubic Smoother** when making the image larger.

Image Adjustments

Levels

The levels panel can be used to set the overall contrast. In general, most images will benefit from making the brightest pixels in the image be white and making the darkest pixels be black.

- Select **Layer->New Adjustment Layer->Levels**.
- If the histogram does not reach the left side of the graph, move the left slider to the base of the histogram (maybe a little less). This makes the darkest shadows pure black.

If you **Alt-click** on the left slider, the image will turn white. As you drag the slider to the right, the clipped shadows will begin to show up as black areas in the image. This makes it easy to see where you are losing detail as you adjust the slider.

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- If the histogram does not reach the right side of the graph, move the right slider to the base of the histogram (maybe a little less). This makes the brightest highlights pure white.
If you **Alt-click** on the right slider, the image will turn black. As you drag the slider to the left, the clipped highlights will begin to show up as white areas in the image. This makes it easy to see where you are losing detail as you adjust the slider.
 - Move the center slider to adjust the mid-tones. This will make the overall image lighter or darker.
 - The output sliders are used to decrease the blackness of the shadows and the whiteness of the highlights. This is only necessary if you need to compensate for changes in the image during printing (e.g., dot gain).

Curves

- Select **Layer->New Adjustment Layer->Curves**.
- The graph shows "input" on the bottom with shadows on left and highlights on the right. The "output" on the left side of the graph shows what the values are being changed to as you drag points on the graph. That is, dragging a point up makes its value (and those around it) lighter and dragging it down makes it darker.
- "S" shape makes the curve steeper, which increases contrast.
- Click anywhere in the image and a small circle will be drawn on the line in the curves panel showing the location of that pixel in the curves data. To create a point on the curve at that location, release the mouse button, then **Ctrl-click** on that location.

Color Balance

Method 1

- Select **Image->Adjustments->Variations**. This tool provides a grid of pre-adjusted images to select from.

Method 2

- Select **Layer->New Adjustment Layer->Color Balance**.
- Be sure to check and adjust shadows, highlights, and mid-tones separately.

Method 3

- Select **Layer->New Adjustment Layer->Photo Filter**.
- Select **Filter**.
- Try different filters from the drop down box.
- Move the density slider to adjust intensity of the filter.

Shadow/Highlights

- You cannot perform the shadow and highlight adjustment in an adjustment later. Therefore, copy the background layer and perform the adjustment on the copy.

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- Duplicate the background layer by selecting the background layer. Then, select **Layer->Duplicate Layer**.
 - Select **Image->Adjustments->Shadow/Highlights**.
 - Check the **Show More Options** check box to see all the options available.
 - Shadows amount is initially set to 50%. Reset it to zero before starting to make adjustments.
 - The amount determines how much to lighten shadows or darken highlights. Start with a setting of 0%. The tonal width and radius determine which pixels are affected.
 - The tonal width determines the range of pixels that will be adjusted based on their brightness, or luminosity. For example, using a low tonal width when adjusting shadows will cause only the darkest pixels to be adjusted. Start with a setting of 50%.
 - The radius determines how much of the surrounding area will be affected when making the adjustment. That is, it is used to restrict the adjustment based on the relative location of pixels to the shadow or highlight areas being adjusted. Start with a setting of 30 pixels.

Exposure

Overexposure

- If the image is washed out (too light), create a duplicate layer and set the **Blend Mode to Multiply**, which will make image twice as dark.
- Duplicate again to darken further.
- Once the image is too dark, reduce the opacity on the top layer.

Underexposure

- If the image is too dark, create a duplicate layer and set the **Blend Mode to Screen**, which will make image half as dark.
- Duplicate again to lighten further.
- Once the image is too light, reduce the opacity on the top layer.

Sharpen

- Either flatten the image or select the layer that contains the part of the image that you want sharpened.
- To sharpen detail, rather than color, change the image to Lab mode and only sharpen the lightness channel (each time you change the color mode, it causes a slight loss of quality).
- The preview image in the Unsharp and Smart Sharpen dialog boxes show the effects of the current sharpening settings. Click on the preview image and it will revert to the image without sharpening as long as you hold down the mouse button. The **Preview** checkbox determines whether the effect is visible in the actual image as opposed to being visible only in the preview area of the dialog box.
- Enter **Ctrl-Alt-0** to view the image at 100% magnification (each image pixel is represented by one monitor pixel). If the magnification is greater than 100%, then more than one monitor is used to

represent each image pixel. If the magnification is less than 100%, then each you are not seeing all the image pixels because each monitor pixel represents more than one image pixel.

Using Unsharp Filter

- Select **Filter->Sharpen->Unsharp Mask**.
- The **Amount** controls how much the contrast is enhanced along the edges in your image. You can think of the amount as controlling the intensity of the halo effect created along the edges in your image. It determines how much to lighten the light pixels and darken the dark pixels when they are part of an edge. Set between 50-150. Use 85 as a default.
- The **Radius** controls the width of the area to be affected by the increase in contrast along the edges of your image. You can think of the radius as controlling the width of the halo effect that is created along the edges in your image. It specifies how far from the current pixel to look for other pixels that are part of the edge. Set to 1-1.2, maybe 2, but only rarely more.
- The **Threshold** is the difference in value of the surrounding pixels that identifies an edge. For example, if threshold is 4, then only pixels that differ by 4 or more are sufficiently different to constitute an edge. Pixels that differ by less than 4 are similar to the current pixel and not an edge. The higher the threshold, the less sharpening is affected. Set between 3-20. Use 4 as a default.

Technique 1

- Start by setting **Amount** to **500**, **Radius** to **1**, and **Threshold** to **0**.
- Slowly increase the threshold until fine detail is not exaggerated and begins to smooth out (typically 0-9).
- Change the radius to the highest setting that does not make the edges look like they are glowing (typically .5-2). Use a lower radius for images with fine detail.
- Adjust the amount until the image looks naturally sharp (typically 15-200). Use a lower setting of amount with higher settings of radius, and vice-versa. If halos appear at the edges or fine detail, it has too much contrast; reduce the amount.

Technique 2

- Start with a high amount and low radius. Set **Amount** to **500** (the maximum), and **Radius** to **0.1** (the minimum). Set **Threshold** to **0**.
- Increment **Radius** by **0.1** pixels until you see a marked jump in overall sharpness. If necessary, fine tune by setting **Amount** to **100** and incrementing by 100, 50, then 25 if necessary.
- Check for excessive noise in the image. If necessary, increase **Threshold** to reduce noise. Be conservative. Error on the side of under-sharpening. If you've used good photographic fundamentals and a decent lens, it doesn't take much sharpening to really "pop" the sharpness in your prints and screen images.

Technique 3

- Combine high **Amount** (30-500) with low **Radius** (0.2-0.8), or
- Small **Amount** (7-150) with high **Radius** (0.8-2.0).
- Use **Threshold** of 0 for nature photography with small detail like feathers.

- Use **Threshold** of 8-12 for portraits so every detail is not sharpened.

Unsharp Settings

Amount	Radius	Threshold	Use
150	1	10	Soft subjects (people, flowers, animals).
65	3-4	2-3	Hard edged subjects (cars, buildings).
85	1	4	All-purpose filtering; good for most images.
375	.25	0	Eye of the subject

- Sharpen twice to increase sharpening (**Filter->Last Filter**) rather than increasing the values.
- Rough texture and well defined edges can use more sharpening.

Using Smart Sharpen Filter

The Smart Sharpen filter provides more control than the Unsharp filter and is a good choice for sharpening photographs.

- Select **Filter->Sharpen->Smart Sharpen**.
- The **Amount** and **Radius** settings are the same as with the Unsharp filter.
- The **More Accurate** checkbox at the bottom of the **Basic** sharpening section takes the place of the **Threshold** setting in the Unsharp filter. Selecting this checkbox reduces the threshold for finding an edge and thus, more edges are found. Select this checkbox for most images.
- Selecting the **Advanced** checkbox causes **Shadow** and **Highlight** tabs to appear. These can be useful for selective sharpening, but you are more likely to want to sharpen based on the subject or background.
- The **Remove** drop-down list lets you select the tool used to remove certain types of blur. Use **Lens Blur** as the default. Although you cannot change this setting when using the Unsharp filter, the Unsharp filter uses Gaussian Blur.

Selective Adjustments

Dodge and Burn

This technique works by adding a neutral layer to the image that can be either lightened or darkened in specific areas where you want make changes.

- Select **Layer->New->Layer**.
 - Set **Mode** to **Overlay**.
 - Check **Fill with Overlay-neutral color (50% gray)** check box (if the checkbox is not active, make sure Overlay mode is selected above).
- Select the Brush tool by pressing the **B** key. Use a soft brush (hardness = 0%).
- For burning, make sure foreground is black. Press the **D** key to restore the default colors (black foreground and white background).

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- For dodging, change the foreground to white. Press the **X** key to exchange the foreground and background colors. You can dodge and burn on the same layer, by alternately painting with white and black.
 - Reduce the opacity of the layer to reduce the effect of dodging and burning. To change the opacity, select the layer in the Layers panel and change the opacity in the **Opacity** field at the top of the panel.
 - It may be more effective to reduce the opacity of the brush rather than the entire layer so that it is easier to use different amounts of dodging and burning in different areas.

Dodge

This technique works by a new adjustment layer using the screen mode. By creating an all-black layer mask, the effect of the layer is masked out. Now, painting on the layer mask with a white brush allows the lightening effect of the layer to show through.

- Select **Layer->New Adjustment Layer->Levels**.
 - Set **Mode** to **Screen**.
- Select **Edit->Fill**. In the popup, select **Black** from the **Contents** drop down list.
- Select the Brush tool by pressing the **B** key. Use a soft brush (hardness = 0%).
- Make sure foreground is white. Press the **D** key, then the **X** key.
- Paint with the mouse to lighten areas of the image.
- Reducing the opacity of the brush reduces the effect, which allows you to make very subtle changes.

Burn

- Same as dodging (above) but create an adjustment layer with the mode set to **Multiply** instead of **Screen**.

Remove Spots

Create a Spotting Layer

Create a new layer so you do not have to modify the original pixels.

- Select **Background** layer, then select **Layer->New ->Layer**. Name the layer to “Spotting Layer”. This creates a new layer immediately above the background layer.
- After selecting the tool you are going to use, be sure to select the spotting layer and select **Sample All Layers** from the option bar.

Using the Clone Stamp Tool

- Select the Clone Stamp tool by pressing **Shift-S**.
- In the options bar:

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- Set the brush size (**Diameter**) so it is slightly larger than the narrowest dimension of the spot you are going to remove (press [or]). Use a soft edge brush (set **Hardness** to 0%).
 - Set the **Mode** to **Normal**. You can change the mode to **Lighten** if removing dark spots or **Darken** if removing light spots.
 - Select **Aligned**. This causes the source to move with the cursor at the destination.
 - Set **Sample** to **Sample All Layers** if you are spotting from a layer above the background layer.
 - Move the cursor over the area you want to clone from and press **Alt-Click** for Photoshop to remember the location.
 - Move the cursor over one end of the spot you want to remove. Then click and drag the cursor over the length of the spot. To experiment with different results, use a different size brush or click and drag from a different direction.

Using the Healing Brush Tool

- Select the Healing Brush tool by pressing **Shift-J** or by selecting the band-aid icon in the tools panel.
- In the options bar:
 - Set the brush size (**Diameter**) so it is slightly larger than the narrowest dimension of the spot you are going to remove (press [or]). Set **Hardness** to 0%, **Spacing** to 25%, **Angle** to 60 degrees, and **Roundness** to 60%.
 - Set the **Mode** to **Normal**. You can change the mode to **Lighten** if removing dark spots or **Darken** if removing light spots.
 - Select **Aligned**. This causes the source to move with the cursor at the destination.
 - Set **Sample** to **Sample All Layers** if you are spotting from a layer above the background layer.
- Move the cursor over the area you want to clone from and press **Alt-Click** for Photoshop to remember the location.
- Move the cursor over one end of the spot you want to remove. Then click and drag the cursor over the length of the spot. To experiment with different results, use a different size brush or click and drag from a different direction. This tool is different than the Clone Stamp tool because instead of the pixels being copied from the source to the destination, the texture is copied and the color is blended, which can make the correction more natural looking.

Using the Spot Healing Brush Tool

- Select the Spot Healing Brush tool. The Spot Healing Brush tool is on the same icon as the Healing Brush tool, so press **Shift-J** until the icon changes to the icon of a band-aid over a spot.
- In the options bar:
 - Set the brush size (**Diameter**) so it is slightly larger than the narrowest dimension of the spot you are going to remove (press [or]). Set **Hardness** to 0%, **Spacing** to 25%, **Angle** to 60 degrees, and **Roundness** to 60%.

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- Set the **Mode** to **Normal**. You can change the mode to **Lighten** if removing dark spots or **Darken** if removing light spots.
 - Select **Proximity Match**.
 - Select **Sample All Layers** if you are spotting from a layer above the background layer.
 - Move the cursor over one end of the spot you want to remove. Then click and drag the cursor over the length of the spot. To experiment with different results, use a different size brush or click and drag from a different direction. This is the same as the Healing Brush tool except you do not need to define a source to copy the pixels from.

Using the Patch tool

- Select the Patch tool. The Patch tool is on the same icon as the Healing Brush tool, so press **Shift-J** until the icon changes to the patch icon.
- Select area to repair using any selection tool.
- Drag that selection over an area that you want copied over the area to repair.
- Area will be cloned, except texture will be preserved.

Remove Unwanted Element

- Select the unwanted element with the Lasso tool. Selection should be slightly larger than the area to remove.
- Move the selection to an area that contains the material that will be used to cover the area. Any selection tool can be used to move the selection.
- If the cover material is too small, use the Lasso tool to reduce the size of the selection.
- Copy and paste the cover material (**Edit->Copy, Edit->Paste**). This will create a new layer called Layer 1. Use the Move tool to move Layer 1 over the top of the inclusion. To completely cover the inclusion, you may have to paste and move several new layers. Once this is done, select **Layer>Merge Down (Ctrl-E)** to collapse the new layers into a single Layer 1.
- Create a layer mask for Layer 1. Highlight Layer 1 and select **Layer->Add Layer Mask->Hide All**. Do not be alarmed when the inclusion suddenly appears again. This is an intended feature of the hide all layer mask.
- Feathering and blending the edges of Layer 1 involves painting on the layer mask with a feathered brush. To select a feathered brush, select the Brush tool on the tool panel. Click on the Brush pull-down menu. Scroll the Brush pull-down menu until an appropriate brush appears. In this case, I've selected a 100 pixel feathered brush. Double click on the desired brush to select.
- To set the color of the brush, double click the foreground color box and pick a color from the Colors Panel. In this case, I've picked black. Clicked on the layer mask of Layer 1 to select it. Paint along the edges of the inclusion until just exposed.
- Merge Layer 1 back into the background layer by selecting Layer 1 in the layers panel, and select **Layer>Merge Down (Ctrl-E)**. Apply the Clone Stamp tool to break up any traces of a cloned pattern.

Whiten Teeth

- Select teeth using any selection tool.
- Select **Select->Modify->Feather**. Set **Feather Radius** to **2**.
- Select **Layer->New Adjustment Layer->Hue/Saturation**
- Change **Master** to **Yellows**.
- Reduce saturation by moving the **Saturation** slider to the left.
- Change back to **Master**.
- Increase lightness moving the **Lightness** slider to the right.

Improve Skin

- Duplicate background layer.
- Turn off the *eye* on the new layer so it does not hide the original background layer.
- Select the background layer (that is, the bottom layer, not the copy).
- Remove blemishes with spot healing tool. Example brush settings: hardness 80%, spacing 25%, angle 60%, and roundness 60%.
- Select **Filter->Blur->Gaussian Blur**. Set **Radius** to **3**.
- Turn on the *eye* on the copy of the background layer (that is, the top layer).
- Add a layer mask to the copy of the background layer (that is, the top layer).
- Set the foreground color to dark grey (darker results in less opacity).
- Select the Brush tool by pressing the **B** key. Set **Hardness** to **0**.
- Paint where you want lower image to show through. Good for removing wrinkles; do not do eyes or mouth where you want to preserve sharpness.

Plastic Surgery

The Liquify filter can be used to change the shape of body areas. The tool can be selected from the tool bar on the left side of the window.

- Flatten image.
- Select **Filter->Liquify**.
- Use the *warp* tool to push parts of the image with the brush. For example, it can be used to make a person's cheeks thinner.
- Use the *pucker* tool to pull the sides of the brush toward the center. For example, it can be used to make a person's nose thinner.
- Use the *bloat* tool to make the part of the image under the brush bigger from the center out. For example, it can be used to make a person's eyes larger.

Layers

Using an adjustment layer to make changes allows you to make a change to an image without altering any of the image data.

- If you cannot make an adjustment using an adjustment layer, then duplicate the background and work on the duplicate layer. This allows you to get some of the benefit, such as turning the layer on and off and adjusting the opacity.
- **Shift-Click** on the layer mask to temporarily disable it. **Shift-Click** again to restore it.
- **Alt-Click** on the layer mask to show it full size. **Alt-Click** again to restore it.
- **Ctrl-Click** on the layer mask to convert it to a selection.
- Type \ to see layer mask of active layer as a color overlay on the image. Type \ again to remove it.
- **Ctrl-Click** layer so next adjustment layer will apply to only that layer in a multi-layer image???
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Merge Two Images

- Drag one image onto another image.
- Select the portion of the upper image that you want to keep.
- Create a layer mask on top image (select the Add Layer Mask icon at bottom of layers panel). The layer mask will be initialized by the selection.
- Select the Move tool.
- Check the **Show Transform Controls** checkbox in the options tool bar. If you cannot see the transform controls, zoom out until you can.
- Resize the upper image as desired.
- Select the layer mask in the layers panel for the upper image.
- Use the brush tool to mask out (remove) portions of the upper image that you do not want. Make sure the foreground color is black and opacity is 100%.
- Turn off the *eye* for the lower layer to see what is masked better.

Create a Layer Mask

Every adjustment layer has an associated layer mask. It is initially shown as a white box in the layer in the layer panel. Wherever the layer mask is white, the changes in the layer will apply to the image below. Wherever the layer mask is black, the layer will have no effect on the image below.

Anytime the layer is the active layer, you can use any tool to draw on the image and it will actually be drawing on the layer mask. You can press the backslash key (\) to change the mask red so you can see exactly what is masked and what is not. Press the backslash key again turn off this effect.

Create Layer Mash from Selection

- Before creating a new adjustment layer, use any of the selection tools to select the part of the image that you want the adjustment layer to modify.

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- Create the new adjustment layer. A layer mask will be created for the layer. The part of the image that was selected will be white in the layer mask and the rest will be black.
 - Once the layer is created, you can edit the layer mask whenever the layer is the active layer using any of the other techniques described in this section.

Create Layer Mash Using the Brush Tool

- Create a new adjustment layer and make the adjustment to the area that you are interested in. Disregard the effect the adjustment is having on the area that you are going to mask out.
- The mask will be made by painting, so select the brush tool (**B**) and adjust the size and hardness (usually use a soft brush (0%)).
- Press **D** to set the foreground and background colors to black and white.
- Paint over the areas that you do not want the adjustment layer to effect. As you paint, you will see these areas show up in the layer mask as black and the effect of the adjustment layer will be removed from the area being painted.
- You can erase a mistake by reversing the colors (**X**) and panting with white.
- If you want to change the layer mask at a later time, select the layer to make it active and paint on the image as before to change the layer mask.

You can create a layer mask using this method, but start with a completely black layer mask like this:

- Select **Edit->Fill**. In the popup, select **Black** form the **Contents** drop down list.
- Now, the layer mask blocks the entire adjustment layer so it has no effect.
- Paint with white in the areas where you want the adjustment to take effect.

Create Layer Mask Using the Gradient Tool

- Create a new adjustment layer and make the adjustment to the area that you are interested in.
- Select the Gradient tool (**G**).
- In the options bar:
 - Select the drop down list and select the first thumbnail, which is the foreground to background gradient.
 - In the next set of five icons, select the first one, which is for the linear gradient.
- Press **D** to select the default foreground and background colors (black and white).
- To create the gradient, drag the mouse across the area to be masked from the non-masked area to the masked area. Press the shift key while dragging the mouse to lock the gradient to the nearest 45 degree angle.

Selections

Selections allow you to isolate areas of your image to control where a tool or adjustment will affect the image. There are two types of selections: normal selections and masks. A normal selection is one where you define the perimeter of an area. A mask defines and area by selecting pixels in a mask.

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- If there is an active selection, editing (e.g., **Filter->Sharpen->Unsharp Mask**) will only be applied inside the selected area.
 - Magnetic Lasso aids selection by finding edges.
 - Magic Wand Lasso aids selection by finding similar color.
 - To select the sky: (1) choose the Magic Wand tool in the tools panel; (2) set tolerance (32 in this example); (3) while holding down the shift key, repeatedly click the sky with the magic wand until the entire sky is surrounded by marching ants; (5) save the selection by executing **Select->Save Selection** and naming the selection “sky.”
 - Expand a selection by using the Lasso tool, holding down the shift key, and drawing the extension.
 - Reduce a selection by using the Lasso tool, holding down the Alt key, and drawing the reduction.

Quick Selection

Press **Q** to enter quick selection mode. Press **Q** again to return to normal selection mode. When in quick selection mode, the existing selection is converted to a mask and shown over the image. Now you can use any of the drawing tools to make changes to the existing selection. When you leave quick selection mode (return to normal selection mode), the new selection will be indicated by marching ants.

When you enter quick selection mode, the not selected areas will be shown in red. If there is not an existing selection, nothing will be red when you enter quick selection mode. Use any drawing tool to make a selection. If nothing happens, make sure the foreground color is black and the background color is white.

Note: The quick selection and the layer mask overlaying the image may look similar and can even be displayed at the same time, but they are two different things. The quick selection is a normal selection that will be shown with marching ants when you leave quick selection mode. And, the layer mask is the mask that applies to the currently active layer.

Printing

Shutterfly Settings

- Save as JPEG.
- Use sRGB.
- Disable VividPics or Shutterfly will adjust color, brightness, and contrast. To disable VividPics, go to **My Pictures** and select an album.
 - Select each image in the album where you want to disable VividPics.
 - Select **Edit->Apply effect**.
 - Select the checkbox on the right that says “**Don't apply automatic corrections to picture**”.
 - Select “**Apply this effect to selected pictures**” (this is the link just above the checkbox).

Miscellaneous

Add Text

- Select the Text tool (**T**). Other tools you might want to use are the vertical text tool, the horizontal text mask, or the vertical text mask tools (all in the same location in the tools panel (**Shift-T**)).
- Set the font, style, and size from the options bar.
- Click on the image close to where you want the text to appear. Or you can click and drag to create a text box to constrain the text. This causes a new layer to be created.
- Enter the text. The text layer will automatically be renamed to match the text that is entered.
- Select the Move tool (**V**). Reposition the text as desired.
- You can go back to the Text tool and click on the text to make more changes.
- After the text looks the way you want it using the options on the Text tool option bar, you can add layer styles, which will give the text a three dimensional look. Double click in a blank area of the text layer in the Layers panel to bring up the Layer Style dialog box.
- When you add a layer style to a layer, an icon (*fx*) is added to the right side of the layer in the Layers panel. You can drag this icon and drop it on another layer to copy the layer style from one layer to another. This is useful when you have multiple text layers that you want to all look the same.

Convert to Black and White

Method 1

- Select **Layer->New Adjustment Layer->Black & White**.
- Try the different options in the **Preset** box.
- Fine tune using the sliders.
- Check the **Tint** checkbox if you want to add a color tint to the image (for example, to simulate a sepia image (brown cast)).
- Move **Hue** slider to select color of the tint.
- Move **Saturation** slider to adjust the intensity.

Method 2

- Select **Image->Mode->Grayscale**.

Method 3

- Select **Windows->Show Channels**.
- Look at red, green, and blue channels to see which one makes the best black and white image. Skin tones tend to have a lot of red, so, for example, the red channel is often best. Select that channel.
- Select **Image->Mode->Grayscale**.

Method 4

- Select **Layer->New Adjustment layer->Hue/Saturation**.
- Desaturate the image by moving the saturation slider all the way to the left (setting -100).
- You can leave the image in color mode so you can use the color balance adjustment to change the tone of the image.

Panoramas

- Select **File->Automate->Photomerge**.
- To alter one layer of a panorama, select the layer to adjust with the Control key pressed???
- When taking photograph for panorama, zoom out to 50mm or more.

Panorama Sequence

These are the steps used to make a panorama picture that consists of several images side-by-side.

- Edit the images that will be put in the collage so they are ready to use.
 - Change the size of the images to match the panorama: for example, 4"x4" at 300 ppi. The ppi of the images should be the same as the panorama you are going to create.
 - Flatten the layers so they can be copied to the new panorama image. An easy way to flatten the images without losing the information in the layers is to save them as JPEG files. For example, close the images and enter **File->Scripts->Image Processor** (resize to 1200x1200 pixels (4" x 300 ppi) if necessary).
- Open the (JPEG) images in Photoshop so you can copy them to the panorama.
- Create a canvas for the panorama by selecting **File->New**.
 - Enter the name of the panorama.
 - Set the size so it is large enough for all the images. For example, if you have 4 images that are 4"x4" at 300 ppi, then create a new image that is 4.5"x 16.8" at 300 ppi. Those dimensions allow .25" above, below, and on each end with .1" between each image.
- For each image:
 - Create a new layer for the image by selecting **Layer->New->Layer**, or enter shift-control-N
 - Change to the image in Photoshop. Select the entire image by entering control-A, and copy it by entering control-C.
 - Switch back to the new canvas. Select the new layer. Enter control-V to paste the image in the selected layer. If you are having trouble pasting the image, make sure the image you copied it from was flattened. If you are having trouble seeing it, try using control- (control-minus) to shrink it.
 - You can move the image around by selecting the layer you put it in then left clicking the image and dragging it where you want it. You can use the arrow keys to make small-adjustments.

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- Save the panorama as a JPEG file and copy it to the web page.

Web Photo Gallery

This tool will take a set of images and create a directory that implements a web page for viewing the images. After it is finished, you can use a browser to open the file `index.html` in the directory that is created to view the web page.

- Select **File->Automate->Web Photo Gallery**.

Example

- Open Bridge CS3 (CS4 does not have the option to pass files to Photoshop described below).
- Select **Edit->Find**.
- Specify the source directory where the images are stored in the **Look in** field. Check the **Include All Subfolders** and **Include Non-indexed Files** checkboxes further down.
- Under **Criteria**, in the first drop down box, select **Keywords**. Select **contains** in the second box, and enter the keyword for the web page in the third text box (Alaska, Birds, Boats, BryceCanyon, California, Canada, GeneralInterest, GrandCanyon, GrandTetons, Grenada, LightHouses, Minnesota, PacificCoast, Panoramas, SanFrancisco, Seattle, Yellowstone, Yosemite).
- Press **Find** and Bridge will find all the files to put in the web page.
- Select all the images by pressing **Ctrl-A**.
- Select **Tools->Photoshop->Web Photo Gallery**. This will start Photoshop, start the **Web Photo Gallery** dialog, and pass the names of the images.
- Under **Styles**, select **Centered Frame 1 – Basic** or **Horizontal Neutral**.
- The **Source Images Use** field should say **Selected Images from Bridge**.
- Select the **Destination** button to specify the folder where you want the web page files to be stored.
- Select **Options->General**. Set **Extension** to **.html**. Select **Add Width and Height Attributes for Images**. This makes the web page allocate space for the image while it is loading rather than resizing the page after it downloads the images.
- Select **Options->Banner**. Enter a title for the web page in **Site Name**. Fill in the other fields or leave them blank to leave them off the web page.
- Select **Options->Large Images**. Uncheck **Resize Images** to have the images appear as their natural size or specify the size you want, such as **Custom** and **600** pixels. Set **JPEG Quality** to **High**. Select the checkboxes for any information you want printed with the image. Don't bother with the file name if it is not descriptive.
- Select **Options->Thumbnails**. Change **Size** to **Large** and leave other settings as they are.
- Select **Options->Custom Colors**. Leave settings as they are.
- Select **Options->Security**. This section allows you to cause a message to be printed on the image when it is displayed.
- Select **OK**.

Contact Sheet

- Select **File->Automate->Contact Sheet II**.

Make Grid of Images

- Select **View->Rulers**.
- Select **View->Snap**.
- Select **File->New**. Make new image 6"x6", 150ppi, and RGB, 8bit color.
- Click in vertical ruler and drag line to 2" and another at 4".
- Click in horizontal ruler and drag line to 2" and another at 4".
- Select Rectangular Marquee tool.
- In the image that will be used to populate the grid, hold the shift key and select an area of the image (shift key makes the selection square).
- Select the Move tool.
- Drag the selection and drop on the new canvas that was created above. This creates a new layer.
- Hold the shift key and resize the image until it overlays one of the squares.
- Select the layer that was just created and duplicate it 8 times.
- Use Move tool to move each copy to a different square in the grid.

Blending Modes

Blending modes are the algorithms used by Photoshop to decide how to blend the pixels in the current layer with the cumulative effect of the pixels in the layers below. The blending modes that are most useful for photographers are Normal, Multiply, Screen, Overlay, Soft Light, Difference, and Luminosity.

Independent Layer

Normal

Normal mode causes the pixels (image) in the current layer to cover the corresponding pixels (image) in the layers below. That is, the pixels in the top layer are displayed normally, regardless of the values of the pixels underneath. You can reduce the opacity to see some of the top layer and some of the layer beneath it.

Dissolve

This mode does not have any effect if the opacity of the top layer is 100% with hard edges. When the opacity is reduced, some pixels are turned on or off (rather than being more translucent).

Darken

Darken

This mode uses pixels from the top layer if they are darker than the pixels underneath; otherwise it uses the pixels underneath. The pixels are compared on a color (channel) by color basis. White pixels have little effect and dark pixels have maximum effect.

Multiply

This mode is similar to holding two the effect of looking through two slides held together. If the images above and below are the same, this mode causes the pixels to be twice as dark. This has a similar effect as underexposing the image. White pixels have little effect and dark pixels have maximum effect. This is the opposite of Screen mode.

Color Burn and Linear Burn

These modes use color in the top layer to reduce brightness resulting in a darker image, color change, and darker edges.

Darker Color

This mode uses pixels from the top layer if they are darker than the pixels underneath; otherwise it uses the pixels underneath. It is similar to Darken, but it operates on all colors (channels) at once.

Lighten

Lighten

This mode uses pixels from the current layer if they are lighter than the pixels underneath; otherwise it uses the pixels underneath. The pixels are compared on a color (channel) by color basis. White pixels have maximum effect and dark pixels have little effect.

Screen

This is the opposite of Multiply mode. If the images above and below are the same, this mode causes the pixels to be half as dark. White pixels have maximum effect and dark pixels have little effect. This has a similar effect as overexposing the image.

Color Dodge and Linear Dodge

These modes use color in the top layer to increase brightness resulting in a lighter images.

Lighter Color

This mode uses pixels from the top layer if they are lighter than the pixels underneath; otherwise it uses the pixels underneath. It is similar to Lighten, but it operates on all colors (channels) at once.

Add Contrast

Overlay

This mode multiplies or screens the color depending upon the color in the lower layer. This mode darkens dark colors and lightens light colors. This mode can be used in dodge and burn techniques.

Soft Light

This mode multiplies or screens the color depending upon the color in the lower layer, which darkens dark colors and lightens light colors, similar to Overlay mode, but it produces an effect similar to a diffused spotlight. This mode can be used in dodge and burn techniques.

Hard Light

This mode multiplies or screens the color depending upon the color in the lower layer, which darkens dark colors and lightens light colors, similar to Overlay mode, but it produces an effect similar to a harsh spotlight.

Vivid Light

This mode increases contrast. It is similar to combining Color Dodge and Color Burn.

Linear Light

This mode increases contrast. It is similar to combining Linear Dodge and Linear Burn.

Pin Light

This mode keeps the darkest blacks and lightest whites. Everything else is invisible.

Hard Mix

This mode produces a posterized image consisting of red, green, blue, cyan, magenta, yellow, black, and white.

Compare

Difference and Exclusion

These modes either subtract the colors of the top layer from the lower layer or vice-versa, depending upon which layer is brighter.

Apply Quality

Hue

This mode creates a blend of color with the luminance and saturation of the upper color and the hue of the lower color.

Saturation

This mode creates a blend of color with hue, saturation, and luminosity from the upper layer with the hue and luminosity from the lower layer.

Color

This mode takes the hue and saturation from the upper layer and the luminosity from the lower layer. This can be useful when replacing color in part of an image so it maintains the correct tone.

Luminosity

This mode takes the luminosity from the upper layer and the hue and saturation from the lower layer. This can be useful for a Curves adjustment layer or an Unsharp Mask to prevent color changes.

Keyboard Shortcuts

PC and Mac Command Keys

Control Key	⇔	Apple Key ¹
Alt Key	⇔	Option Key
Shift Key	⇔	Shift Key
Right-click	⇔	Control-click

Keys

The letter keys are used to select a group of tools. The letter key alone will select the most recently used tool listed for that key. Using the **Shift** key with the letter key will cycle through the tools associated with that key.

A, Shift-A	Path selection and direct selection tools
B, Shift-B	Brush, pencil, and color replacement tools
C, Shift-C	Crop tool
D, Shift-D	Set default colors for foreground and background (black and white)
E, Shift-E	Eraser, background eraser, and magic eraser tools
F, Shift-F	Cycle through full screen modes: standard, maximized, full screen with menu, and full screen without menu
G, Shift-G	Gradient and paint bucket tools
H, Shift-H	Hand tool
I, Shift-I	Eye dropper, color sampler, ruler, and count tools
J, Shift-J	Spot healing brush, healing brush, patch, and red eye tools
K, Shift-K	Slice and slice select tools
L, Shift-L	Lasso, polygonal lasso, and magnetic lasso tools
M, Shift-M	Rectangular marquee and elliptical marquee tools
N, Shift-N	Notes and audio annotation tool
O, Shift-O	Dodge, burn, and sponge tools
P, Shift-P	Pen and freeform pen tools
Q, Shift-Q	Toggle quick mask mode
R, Shift-R	Blur, sharpen, and smudge tools
S, Shift-S	Clone stamp and pattern stamp tools
T, Shift-T	Text, vertical text, horizontal text mask, and vertical text mask tools
U, Shift-U	Rectangle, rounded rectangle, ellipse, line, polygon, and custom shape tools
V, Shift-V	Move tool

¹ The Apple key is also called the Command key.

W, Shift-W	Quick selection and magic wand tools
X, Shift-X	Swap foreground and background colors
Y, Shift-Y	History brush and art history brush tools
Z, Shift-Z	Zoom tool
F1	Help
F2	Cut
F3	Copy
F4	Paste
F5	Show brushes panel
F6	Show color panel
F7	Show layers panel
F8	Show info panel
F9	Show Actions window
F12	Revert
Tab	Hide/show panels and menus
Space	Temporarily activate hand tool
Enter	Highlight first field in options bar
Right-click	Context sensitive menu.
[Decrease brush size
]	Increase brush size
{	Decrease brush hardness
}	Increase brush hardness
'	Previous brush
.	Next brush
<	First brush
>	Last brush
/	Toggle preserve transparency
\	Toggle showing layer mask of active layer over image (same as Shift-Alt-click)
Ctrl-A	Select all
Ctrl-C	Copy
Ctrl-D	Deselect
Ctrl-E	Merge selected layers (flatten)
Ctrl-F	Reapply last filter
Ctrl-G	Group layers
Ctrl-H	Toggle showing edge of selection (marching ants)
Ctrl-I	Invert current mask
Ctrl-J	Duplicate layer
Ctrl-K	Preferences (general)
Ctrl-N	New image
Ctrl-O	Open
Ctrl-P	Print
Ctrl-Q	Exit
Ctrl-R	Show/hide rulers
Ctrl-S	Save
Ctrl-T	Free transform
Ctrl-V	Paste
Ctrl-W	Close
Ctrl-X	Cut
Ctrl-Y	Proof colors
Ctrl-Z	Undo/redo (toggle)
Ctrl-0	Zoom to fill screen (see also Ctrl-Alt-0)
Ctrl-1	Load red channel (in RGB color mode)
Ctrl-2	Load green channel (in RGB color mode)
Ctrl-3	Load blue channel (in RGB color mode)
Ctrl-~	Load RGB channel (in RGB color mode)
Ctrl+=	Zoom in
Ctrl--	Zoom out
Ctrl-Space	Temporarily activate zoom tool to zoom in
Ctrl-Tab	Cycle through open documents
Ctrl-Backspace	Fill layer mask with background color
Ctrl-Delete	Fill layer mask with background color

Ctrl-]	Bring layer forward
Ctrl-[Send layer down
Ctrl-'	Show/hide grid
Ctrl-;	Show/hide guides
Ctrl-Shift-C	Copy merged
Ctrl-Shift-D	Reselect
Ctrl-Shift-E	Merge visible layers (flatten)
Ctrl-Shift-F	Fade
Ctrl-Shift-G	Ungroup layers
Ctrl-Shift-H	Show target path
Ctrl-Shift-I	Invert current selection
Ctrl-Shift-J	Create new layer via cut
Ctrl-Shift-K	Color settings
Ctrl-Shift-M	Record measurements
Ctrl-Shift-N	Create new layer
Ctrl-Shift-O	Browse (e.g., open Bridge)
Ctrl-Shift-P	Page set up
Ctrl-Shift-S	Save as
Ctrl-Shift-T	Transform again
Ctrl-Shift-V	Paste into
Ctrl-Shift-W	Close and go to Bridge
Ctrl-Shift-X	Liquefy
Ctrl-Shift-Y	Gamut warning
Ctrl-Shift-Z	Redo one step (multi-step)
Ctrl-Shift-]	Bring layer to front
Ctrl-Shift-[Send layer to back
Ctrl-Shift-;	Toggle snap
Ctrl-Shift-Tab	Cycle backwards through open documents
Ctrl-Alt-A	Select all layers
Ctrl-Alt-C	Canvas size
Ctrl-Alt-D	Feather selection
Ctrl-Alt-G	Create/release clipping mask
Ctrl-Alt-I	Image size
Ctrl-Alt-O	Browse (e.g., open Bridge)
Ctrl-Alt-R	Refine edge of selection
Ctrl-Alt-S	Save as
Ctrl-Alt-V	Vanishing point
Ctrl-Alt-W	Close all
Ctrl-Alt-X	Extract
Ctrl-Alt-Z	Undo one step (multi-step)
Ctrl-Alt-0	Zoom to 100% (each pixel in image is one pixel in display)
Ctrl-Alt-Space	Temporarily activate zoom tool to zoom out
Ctrl-Alt-;	Lock guides
Ctrl-Shift-Alt-E	Create new pixel layer by merging layers below current layer
Ctrl-Shift-Alt-I	File information
Ctrl-Shift-Alt-K	Keyboard shortcuts
Ctrl-Shift-Alt-M	Menus
Ctrl-Shift-Alt-O	Open as
Ctrl-Shift-Alt-P	Print one copy
Ctrl-Shift-Alt-S	Save for web and devices
Ctrl-Shift-Alt-X	Pattern maker
Shift-F5	Fill
Shift-F6	Feather selection
Shift-F7	Select inverse
Shift-Tab	Hide/show panels
Alt-F9	Show Actions window
Alt-Space	Temporarily activate zoom tool to zoom out (same as Ctrl-Alt-Space)

Layers

Ctrl-E	Merge selected layers
Ctrl-J	Create new layer by copying the current layer
Ctrl-Shift-E	Merge visible layers
Ctrl-Shift-Alt-E	Create new pixel layer by merging layers below current layer

Layer Panel

Alt-click mask	Toggle displaying mask in the main window
Shift-click mask	Toggle disabling the layer mask
Shift-Alt-click mask	Toggle showing mask in overlay mode
Right-click mask	Display context menu

Selections

Shift-selection	Add to selection
Alt-selection	Subtract from selection
Shift-Alt-selection	Intersect selections
Ctrl-A	Select all (entire image)
Ctrl-D	Deselect
Ctrl-H	Toggle showing edge of selection (marching ants)
Ctrl-I	Invert current mask
Ctrl-Shift-I	Invert current selection
Ctrl-Alt-D	Feather selection
\	Toggle showing mask of current layer in overlay mode

Zoom

Ctrl+=	Zoom in
Ctrl--	Zoom out
Ctrl-Alt-0	Zoom to 100% (each pixel in image is one pixel in display)
Ctrl-Space	Temporarily activate zoom tool to zoom in
Ctrl-Alt-Space	Temporarily activate zoom tool to zoom out
Alt-Space	Temporarily activate zoom tool to zoom out (same as Ctrl-Alt-Space)

Palettes

Alt	Temporarily change the Cancel button to a Reset button
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Tools

Brush Tool

- When the brush tool is selected, pressing the [key will decrease the size of the brush and] will increase the size of the brush.