



GoingManual.com

Photoshop Tutorials For Photographers

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Post Processing Techniques in Photoshop

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To minimize the amount of post processing your photos require, and to learn more about manual photography, download 'Going Manual, A Guide to Digital Photography and Post Processing' from GoingManual.com

Introduction

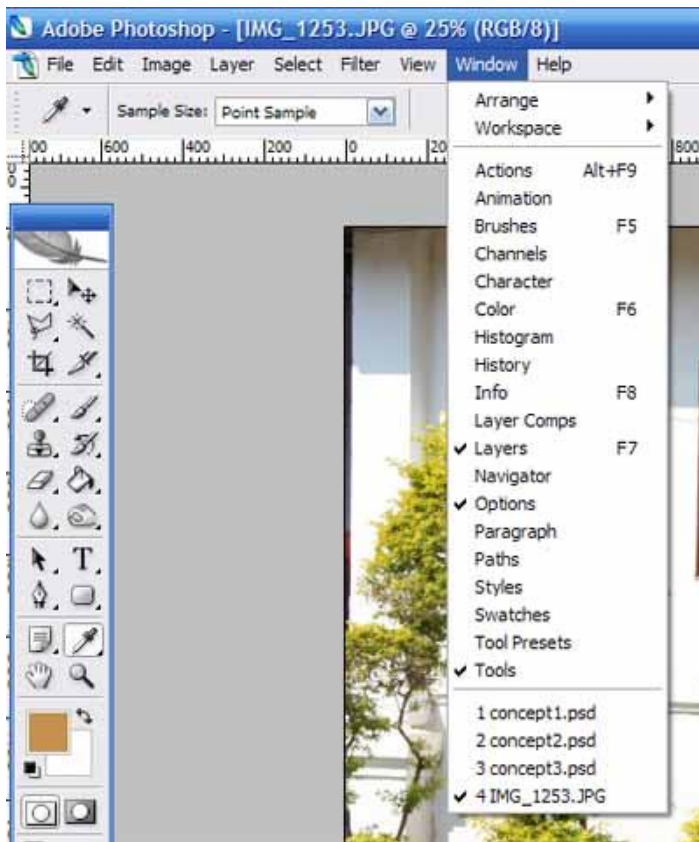
So you've taken the best picture you can but it doesn't end there. You need to master the digital darkroom to get the best from your image. The following tutorials are suitable for beginners but by combining the techniques you'll be able to achieve quite advanced image adjustments.

Register at the GoingManual.com forums for help and support. Comments on all the tutorials are welcome. Your comments may contribute to make these tutorials even easier to understand in the next edition. It's possible the website has already been updated so have a look to see.

I hope this book proves useful and you enjoy learning how to improve your digital darkroom skills.

- Simon

Photoshop Primer



The menu

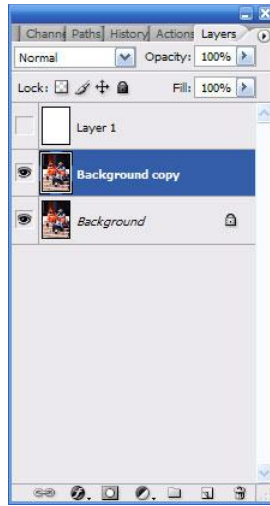
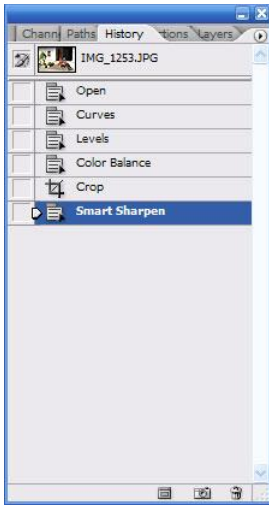
The menu at the top of the program contains the tools and features of Photoshop.

Find missing windows in the Windows section of the top menu. Make sure they have a check mark (tick), if not they won't be visible. Just click on them to show them. These two are usually on tabs in the same window. You can drag and drop the tabs of windows onto each other or into a window of its own

Items in the menu are reference using a notation e.g. File>New where New is within the submenu of File. It is used for multi level sub menus such as Image>Adjustments>Levels to open up the Levels dialog window.

Layers

Photoshop uses layers. Layers have many advantages over non layer image manipulation programs. If you make changes to an image you can use the Undo feature to go back and try again. Undo usually has a limited amount of steps back, however using layers the image can be copied and pasted onto itself to create a digital collage. Changes can be made to the new layer leaving the original image intact. Pieces of an image can be copied and pasted onto a new layer to allow changes to show in selected areas or you can erase areas of a copied image and let the original image show underneath. A layer mask works in a similar way allowing changes you make to a layer to show only where you choose. More on layer masks later. One of the first things I do when working on images is to copy the image to a new layer this protects the original image as you can't accidentally save over your original Jpeg image. Jpeg doesn't support layers so you have to flatten the image (Image>Flatten image). You can even make layers visible or invisible by toggling the small eye icon in the layers window.



Click to enlarge

Frequently Used Windows

Undo errors using ctrl+z or the History window, Window>History.

If your monitor is small you can use the 'Tab' key to temporarily remove all extra windows and clear your workspace. Hit Tab again to get them back.

Windows>Tools to show the tools palette (a.k.a. the tools window)

Windows>Layers to show the Layers window.

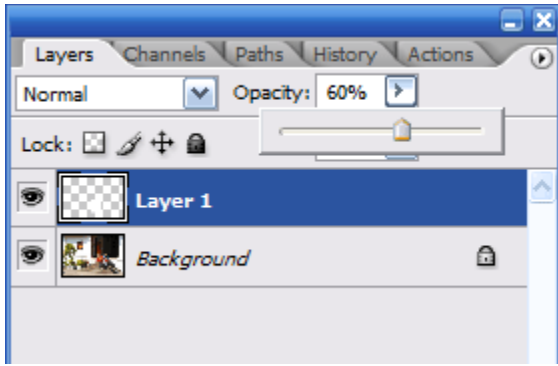
Windows>History to show the History window.

When an item in the tools window is selected it looks pressed in.

A selected layer is blue. Usually changes you make will only effect the selected layer, You can select multiple layers by holding down shift and clicking the additional layers. All selected layers will then be blue.

Delete a layer by moving the mouse over the layer in the layers window and right clicking. Select 'Delete Layer' from the right click options. You can also delete a layer quickly and easily by (left) clicking on the layer and dragging the mouse over the trash can at the bottom of the layers window. It will turn into a fist. Release your mouse and the layer is deleted.

Rename a layer by right clicking on the layer in the Layers window and selecting 'Layer Properties' enter the new name and click 'OK'.



Changing the opacity

Changing the opacity of a layer affects how see through it is, sometimes referred to as Alpha. Its a useful feature to position one layer on top of another.



Hidden tools Some tools are hidden underneath others. If a tool icon has small black arrow then other tools are hidden behind it. In the example the 'fill' tool icon hides the 'gradient fill' tool icon. Click and hold down the mouse on the icon and drag the mouse to the right. The hidden tools will then be visible in a drop down list. Select the tool you want and it becomes the visible tool.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=11>

Saving Your Image

There's one step common to all the tutorials. After manipulating your image, you'll need to save it.

Now your photo is electronic, it's a file. There are several file types and all have their benefits. To save space on your hard drive software can compress the file so it's smaller. The trade off for small files is usually loss of quality. The two categories for compression are lossless and lossy. As the names would suggest lossy compression results in reduction in quality while lossless does not.

Lossy compression includes Jpeg and may be the only option on your camera. GIF is not suitable for photos so you can disregard it. The amount of compression in a Jpeg can be chosen at the time of saving typically 80% provides a greatly reduced file size with no noticeable loss in quality.

Lossless compression includes Tiff and PNG.

Repeated opening and saving of a Jpeg will cause it's quality to decrease and over time the quality will drop to a noticeable level. Over or repeated compression result in compression 'artifacts', visible signs of compression. Only save in JPG when you have to, when file size is a real concern or when you have finished editing an image. Due to the method of compression, different pictures will compress to different values even if you use the same compression settings.

A megabyte (Mb or meg) is 1000 kilobytes (Kb or k). You camera measures the image size in megapixels (Mp).



10% quality, file size 6k



80% quality, file size 27k



100% quality, file size 55k

For storage save in Tiff or PNG. Both are lossless so the image quality wont degrade every time you save the file. Tiff and PNG files do use compression but suffer no loss of quality. The file sizes are typically larger than Jpeg but smaller than uncompressed files. Unfortunately I cant show you the tiff as there not a web supported format so I've used 100% Jpegs below for comparability with the e-book, you can see the tiffs there. LZY

compression is a lossless form of tiff compression and can be used to reduce file size while not reducing file quality.



png24 file size 91k



lzy compressed tiff file size
142k
(image above 100% Jpeg)



uncompressed tiff, file size 170k
(image above 100% Jpeg)

Raw is simply the raw image data and needs to be converted to an image type using software before any further work can be done on it. RAW file sizes typically equal the number of pixels so an 8Mp (Megapixel) RAW file will be 8Mb (Megabyte).

You camera will take in either Jpeg or RAW. You should save in TIFF when you can and Jpeg when you have to.

Exif information is recorded at the time the image is taken by most digital cameras. It includes the data for the shot such as camera make and model, and the setting used, ISO, aperture and shutter speed. It's a great learning tool so you might want to view it as you study.

PNG does not save Exif information and Jpeg will save it after you have edited it only if you choose 'Save as' (in Photoshop). If you choose Photoshop's 'Save for web', all Exif data will be lost. Saving as Tiff will preserve Exif data.

If you use the excellent, free, open source Firefox browser you can view Exif as you surf or if you right click and choose 'open with>firefox' in our file browser.

Get Firefox here. www.getfirefox.com

And the very handy Exif plug in here,
<http://ted.mielczarek.org/code/mozilla/fxif/>

Exif plugin included with kind permission of it's author by Ted Mielczarek.

File Saving in Photoshop

To save a file in Photoshop you can use 'File>Save' but be warned you will overwrite the original file. To avoid this save the file with a different name using 'File>Save As'. Choose the file type from the drop down list and enter a new file name. You may have another dialog window appear with additional saving options such as type or amount of compression. To preserve Exif information in Jpegs make sure the 'As a Copy' box is checked.

If the image is intended for email or posting on the Internet you can use the 'File>Save For Web'. First re-size the image using 'Image>Image Size' to something appropriate for the Internet. A width of less than 800 pixels is typical. Then choose the file type, usually Jpeg for the Internet, and set the quality. You might be able to go as low as 60% quality and still have an acceptable image with only small artifacts. The file size is indicated in the bottom left corner of the Save for Web window. You also have the option of seeing a 'before and after' view. Click the '2-up' tab at the top of the preview window.

8 Mega Pixel File Size Comparison		
	Photoshop	The Gimp
Jpeg 10/12 (83%)	1.7Mb	1Mb
Jpeg 12/12 (100%)	4Mb	3.9Mb
PNG	8.57Mb	3.9Mb
Tiff LZY	9.45Mb	9.5Mb
Tiff None	22.8Mb	22.7Mb
Taken using Jpeg setting with a Canon 350D. File size out of camera 2.99Mb. Saved using 'Save As' and the same file in both programs. PNG in The Gimp was set at 9 no similar setting available in Photoshop.		

Discuss this tutorial here

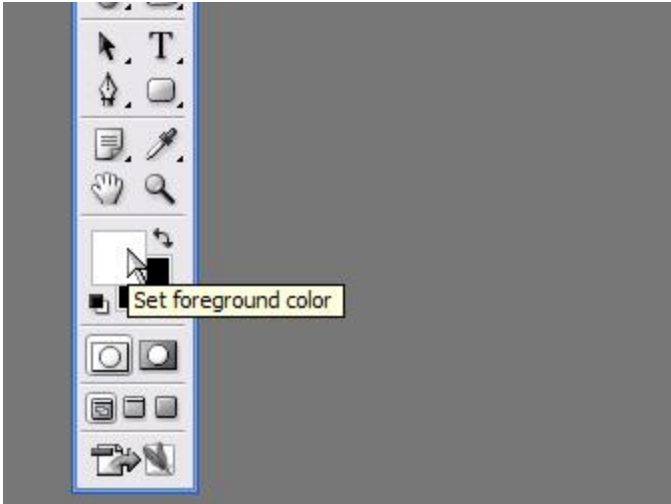
<http://goingmanual.com/photo/board/viewtopic.php?t=12>

Adding a Border

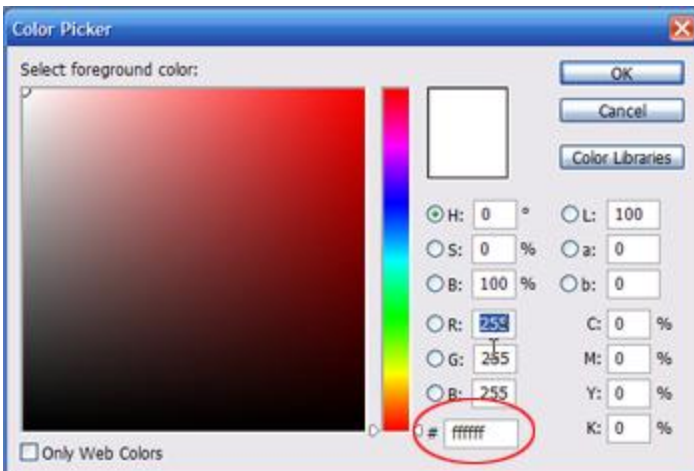
A border can help separate the image from its surroundings making it useful when posting pictures on the Internet.

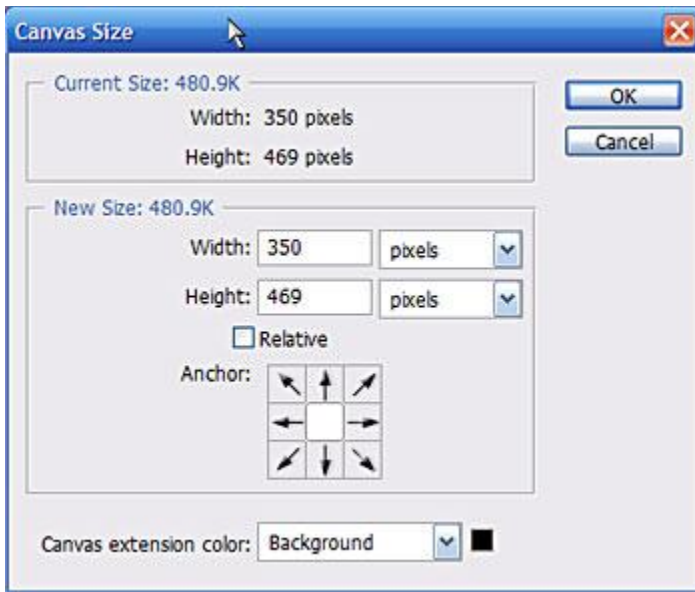
Adding a Border in Photoshop

- Open your image, 'File>Open'.
- Click the foreground color to open the color choice dialog window.



- Set your color using by clicking on the band of color then the large color square
- Alternatively if you know the [hex value](#) enter it where shown.






- Click 'Image>Canvas Size'.
- Increase the values to create your border.
- Every 2 pixel increase will create a 1 pixel border (1 pixels each side)
- If all you want is a simple border then you can finish here.



- To add a second color border repeat the process and select a different color.



- Adding a drop shadow can create a nice effect.
- Select the magic wand tool. 
- Click the layer you want to add the effect to. In the Example I clicked the white layer
- Create a new layer
- Fill the layer with the same color as the layer underneath
- Make sure you select the right fill color then Edit> Fill. In the example the color was white.
- Open the Layers Window, 'Windows> Layers'.
- Double click the layer you would like to add an effect to.
- The blending options dialog window opens.
- Enter the effect you want. In the example I used an Inner Shadow with default settings.

- Ready to print or post on the web.



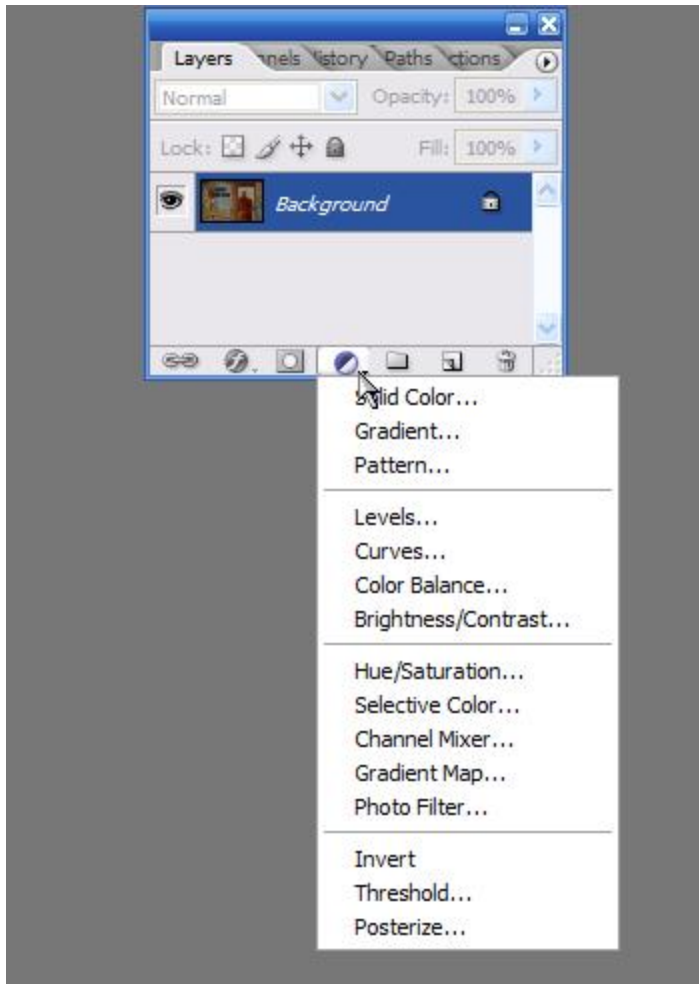
Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=13>

Levels Adjustment

A slight mistake in exposure can be corrected in post processing. The two best methods are 'Levels' and 'Curves'. We're going to have a look at levels here to see how easy it is to make a slight wrong, right.

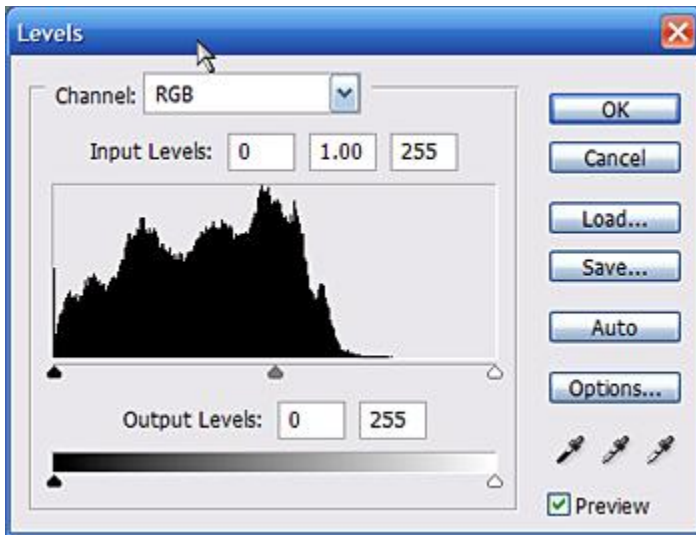
Levels Adjustment in Photoshop



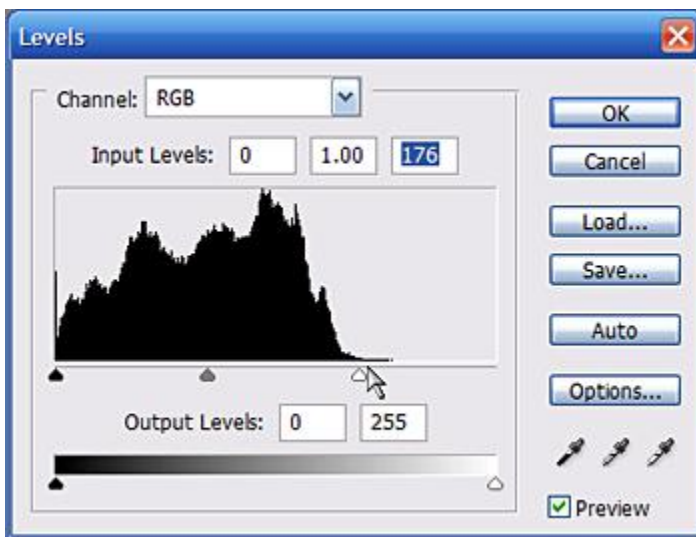
You can make a levels adjustment directly on your photo layer using 'Image>Levels' but there is a great feature in Photoshop that lets us have a little more control.

At the bottom of the Layers window is a small half black, half white circle with a tiny drop down arrow. Click on it to reveal the options available. These are all 'Adjustment Layers' meaning any changes you make don't affect your photo directly until you choose. You can also access the Adjustment Layer option in 'Layer>New Adjustment Layer'.

There are lots of advantages to Adjustment Layers, you can edit it at any time, just click on the icon in the layers window. You can reduce their effect simply by reducing the opacity and if, after you make an adjustment, you're not happy, delete the layer and start again.



- A histogram window will open up showing you the tonal values of your image. We're interested in the right and left side of the histogram.
- Both ends of the histograms curve should reach the sides. If they don't then the image is not using the full dynamic range.
- Directly under the histogram are three small slider arrows representing shadows (black), mid tones (gray) and highlights (white).



- In our example the histogram doesn't reach the right hand side so we lacking dynamic range in the highlights due to a slight underexposure.
- Move the highlights slider left and look at the image. It will become brighter as you move it.
- Find the optimum place, which is usually just as the histogram starts



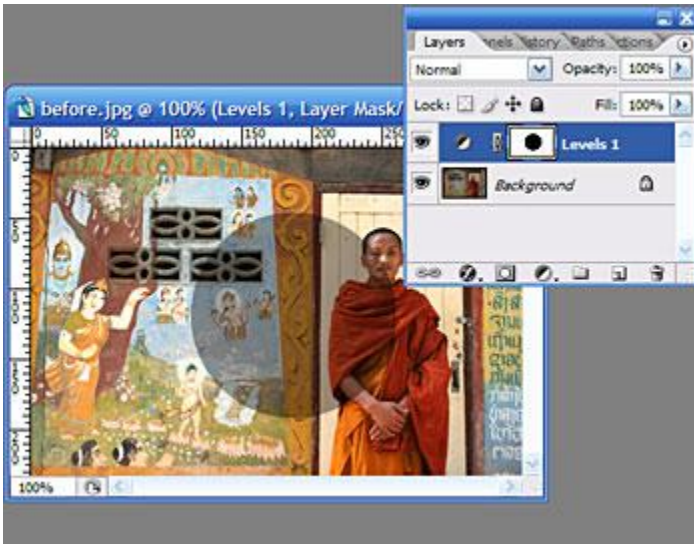
Before



After

- Click OK to apply the new settings.
- When you are ready to save your image you'll need to flatten the layers.
- Click 'Layer>Flatten Image' and save.

This technique can also be used when your image is slightly overexposed to make shadows dark or blacks, black. just move the black shadows slider to the right. In my experience moving the mid tones slider distorts the balance of tones so much it rarely, if ever, helps.



- Another great feature of Adjustment Layers is how they can affect only selected areas.
- In this example I've painted a black circle on the adjustment layer. The black paint doesn't show on the image but on the adjustment layer preview in the layers window. If I use black paint the adjustment is decreased to zero, white areas show the full effect of the adjustment.
- Using gray to paint the adjustment layer reduces the effect by how dark or light the gray is. A very useful trick when processing images with distinct areas in your image that require different amounts of adjustment.
- An example would be a shot of the mountains, where the valley is dark and the snow is bright. Increasing the levels to brighten the valley would blow out (over expose) the snow so increase the levels until the valley looks right. Select the adjustment layer mask and paint black or dark gray where the snow is.
- We can use this technique for advanced post processing, e.g. to simulate a graduated ND filter or to blend multiple exposures together. Have a look at the Blending Multiple Images tutorial to find out how.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=14>

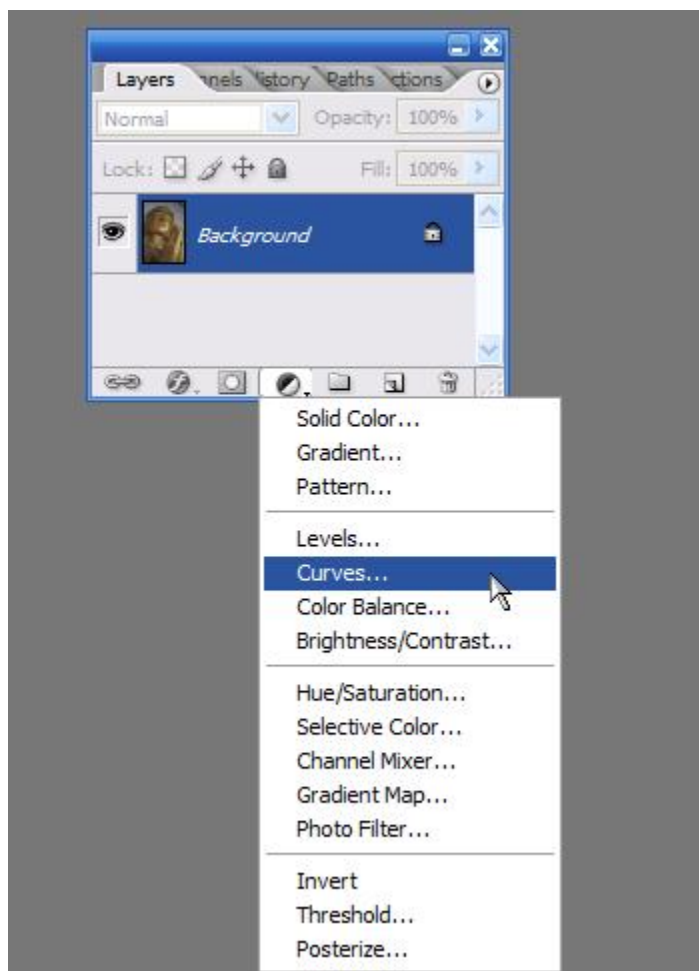
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Curves Adjustment

A slight mistake in exposure can be corrected in post processing. The two best methods are 'Levels' and 'Curves'. We're going to have a look at levels here to see how easy it is to make a slight wrong, right.

Levels usually an easier fix and if the exposure correction is to be applied to the whole image levels is the preferred way to correct the exposure. However curves is useful in correcting tricky exposures. There is also a technique called the S-Curve which can have a dramatic effect on your photo. First lets look a basic adjustment using curves.

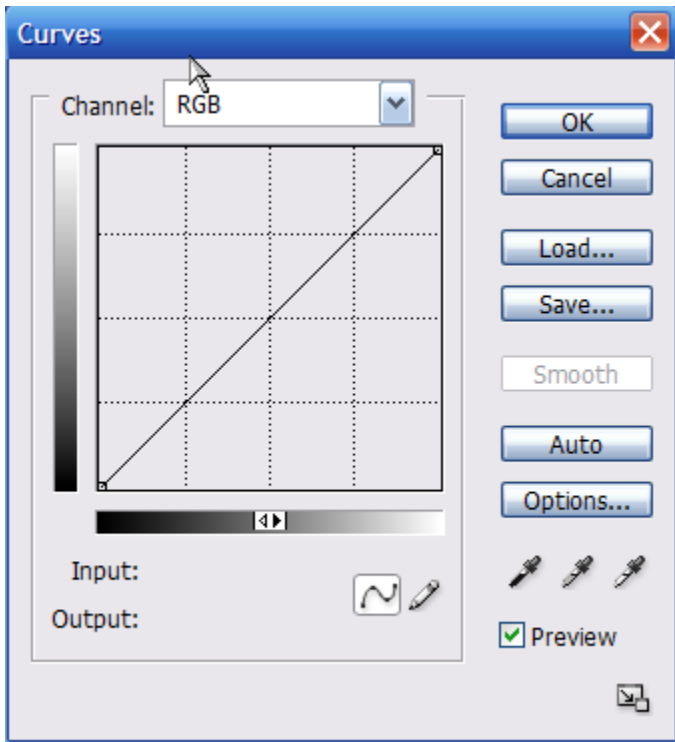
Curves Adjustment in Photoshop



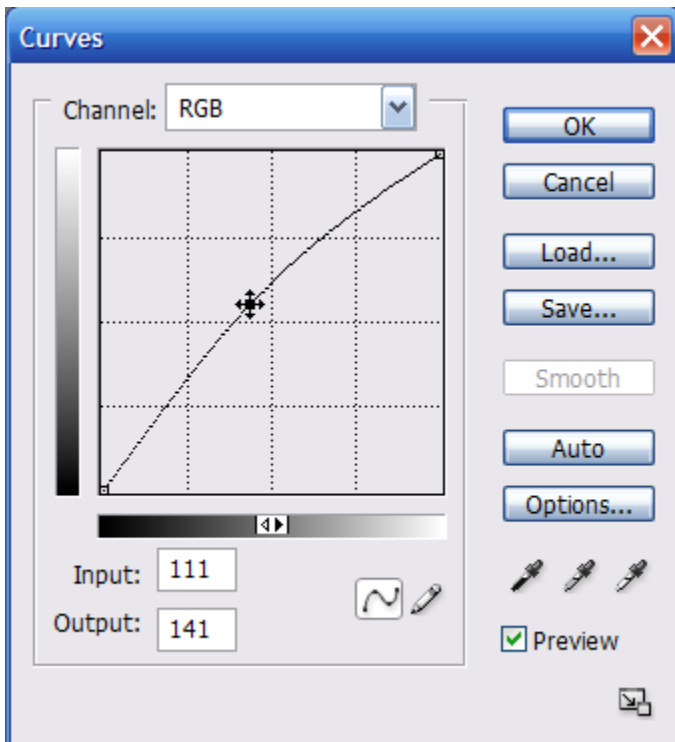
- You can make a levels adjustment directly on your photo layer using 'Image>Curves' but there is a great feature in Photoshop that lets us have a little more control.

At the bottom of the Layers window 'Window>Layers' is a small half black, half white circle with a tiny drop down arrow. Click on it to reveal the options available. These are all 'Adjustment Layers' meaning any changes you make don't affect your photo directly until you choose. You can also access the Adjustment Layer option in 'Layer> New Adjustment Layer'.

There are lots of advantages to Adjustment Layers, you can edit it at any time, just click on the icon in the layers window. You can reduce their effect simply by reducing the opacity and if, after you make an adjustment, you're not happy, delete the layer and start again.



- A graph opens up with a diagonal line running across it.



- Click on the line somewhere in the middle and an adjustment point appears
- To increase exposure move the adjustment point up, and vice versa.



Before



After

- Click OK to apply the new settings.
- We can use this technique for advanced post processing, e.g. to simulate a graduated ND filter or to blend multiple exposures together. Now you've got the basics down go look at the S-Curve adjustment tutorial to understand more how curves can improve your images.



- Another great feature of Adjustment Layers is how they can affect only selected areas.
- In this example I've painted a black circle on the adjustment layer. The black paint doesn't show on the image but on the adjustment layer preview in the layers window. If I use black paint the adjustment is decreased to zero, white areas show the full effect of the adjustment.
- Using gray to paint the adjustment layer reduces the effect by how dark or light the gray is. A very useful trick when processing images with distinct areas in your image that require different amounts of adjustment.

An example would be a shot of the mountains, where the valley is dark and the snow is bright. Increasing the levels to brighten the valley would blow out (overexpose) the snow so increase the curve until the valley looks right and paint black or dark gray where the snow is, on the adjustment layer.

We can use this technique for advanced post processing, e.g. to simulate a graduated ND filter or to blend multiple exposures together.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=15>

The S-Curve Adjustment

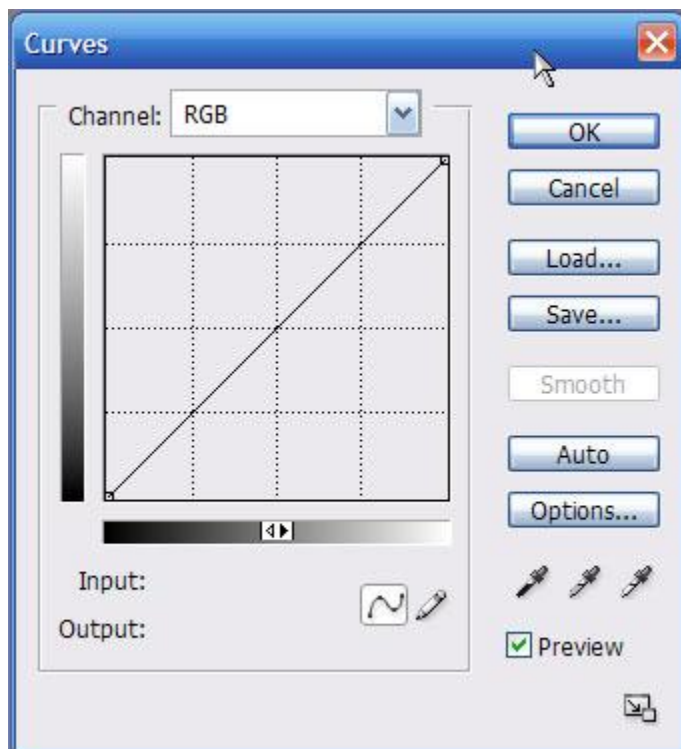
Here is a really simple technique to enhance a certain type of image. Not all pictures will benefit from this, but those that do, sometimes really do. It's a matter of personal taste too. I'm a fan of the s-curve adjustment, it just takes a little experience to know if it will help an image or not. If you're not sure it takes less than a minute to find out.

The S-Curve makes the darks darker and keeps the highlights bright. It's a great way to improve a 'flat' image.

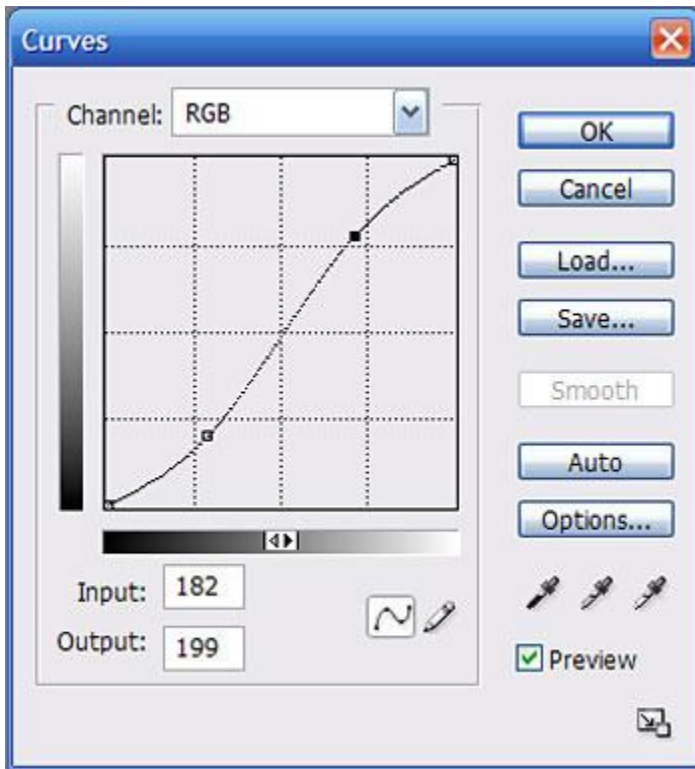
The S-Curve in Photoshop



- This tutorial assumes you have already been through the curves tutorial or are already familiar with adding an adjustment layer.
- Open your image.



- Open a new curves adjustment layer dialog window, 'Layers>New Adjustment Layer> Curves'.



- Click on the line at around the upper 3/4 position.
- Move it slightly up.
- Click on the line at the lower quarter
- Move it slightly down
- The actual amount you move it depends on the photo.
- You should end up with a 'S' shaped curve as shown.



- Your finished image will have richer color and a better dynamic range.
- Flatten 'Image>Flatten Image' and save.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=16>

Adjusting White Balance

Our minds compensate for slight variations when colors are out of balance. Sometimes when we later look at a photo on a computer there is another color cast over it. This is often seen with different types of lighting. Tungsten lighting can give an orange cast and florescent lights a greenish tint. Colored walls also can impart their colors especially when using flash. It is possible to set the white balance in camera, before you take the picture, consult your manual to see how. Traditionally, film photographers used filters to try to compensate but we can remove it in a number of ways in post processing.

If you're shooting in RAW then the color cast can be dealt with in the conversion to Jpeg. Please read the RAW conversion tutorial to find out more. If you're shooting Jpeg then we can remove the color cast in post processing.

There are several ways to remove the color cast. All require a little practice as they rely on your opinion that the color is correctly balanced.

Correcting White Balance in Photoshop

Take 1



- Open your image, 'File>Open'.
- This product photo was taken in Jpeg, in a home made light tent using a sheet as a diffuser and 3 halogen table lights.
- The white background isn't really white and has a tint.
- It's important to develop the skill of detecting what color is tinting the photo. In this photo the white background makes it easier to tell there is a red/orange cast.



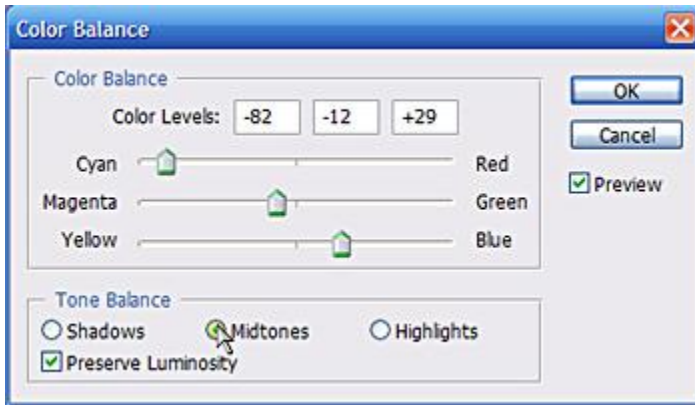
- Open a new levels or curves adjustment layer dialog window, 'Layers>New Adjustment Layer>Levels' (see the Layers or Curves tutorial).
- Notice the 3 eyedropper tools. The left one can be used to determine the black point, the middle for the 18% gray and the right for pure white.
- Select a point on the image that you believe should be pure white.
- Select the white eyedropper, move it to the relevant area and click.
- If you we're lucky enough the color cast will disappear. If not click another area and experiment to see if it's going to work.
- You can experiment with the black and gray droppers too.



Not all images have an area that should be pure white, so this won't always work but its a handy first step.

If you're happy at this point, flatten and save.

Take 2

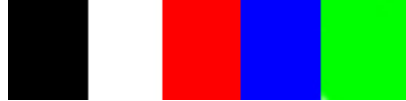


- I'll assume the above didn't work. Delete your adjustment layer and we can try something else.
- Open a new Color Balance adjustment Layer, 'Layers>New Adjustment Layer> Color balance'
- You should have already tried to determine the color of the cast.
- You have a choice of moving 3 sliders between 6 colors.
- In our example the image has a reddish/orange tint.
- Move the Red/Cyan slider away from Red until the red cast is gone.
- This reveals a slight greenish cast so move the Green/Magenta away from Green
- It now looks a little yellow so move the Yellow/Blue slider away from Yellow.
- You can adjust the mid tones and highlights using the selection in the tone balance area.
- You may need to play with the three sliders until you reach a color balance you're happy with.



- If necessary use a level or curve adjustment layer (see tutorial)
- As it hard to tell at first if you've got it right, it helps to get a second opinion at this point.
- Flatten and save.

A handy tip is to open a new document and add some colors to use a reference.



You can copy and paste it onto a new layer on your photo and delete it when you're done, Use any colors that will help you get you adjustments right.

Time saving Tip

If you take multiple photos in the same light conditions, save your work before flattening as a PSD, Photoshop's native file type. You can then open your next photo and copy, ('Select>All' then 'Edit>Copy'). Open you PSD, select the original photo layer and paste, 'Edit>paste', the new photo beneath your adjustment layers and the color balance will be corrected.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=19>

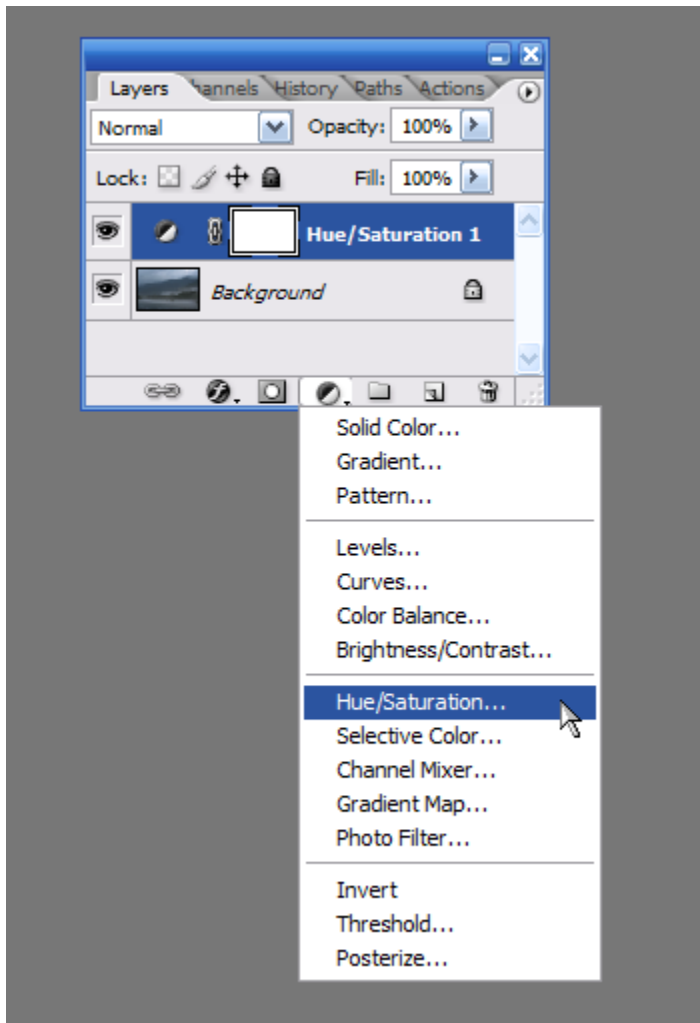
Improving Color Saturation

Sometimes harsh lighting conditions or a little overexposure can result in the colors being a little flat. One cure is to use an S-Curve (see tutorial) but its not right for every kind or photo. If all you need is a little boost in color then we can easily increase the saturation.

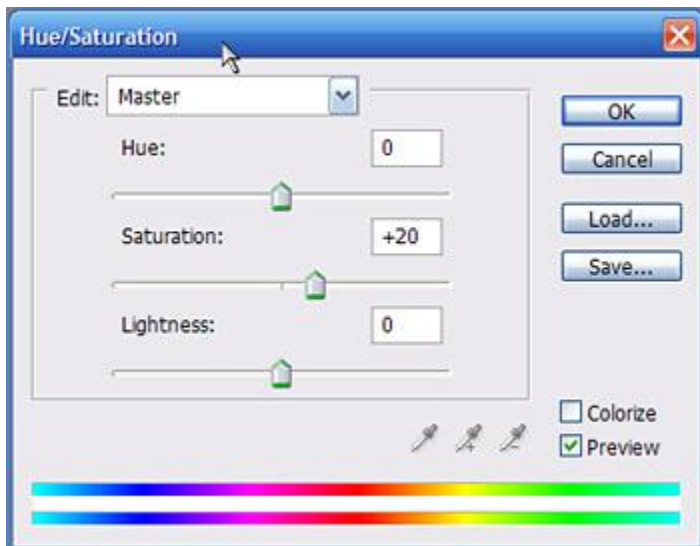
Improving Color Saturation in Photoshop



- Open your image, 'File>Open'.



- Open a new adjustment layer, 'Layers, New Adjustment Layer, Hue and Saturation'.



- Make sure the 'Colorize' box is not selected.
- Increase the saturation to around 20



- You can reduce the opacity of the saturation layer, if the effect is too strong, before you flatten it.
- How much you have to reduce is dependent on the image. In this case I didn't reduce it at all (opacity 100%).
- Flatten and save.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=19>

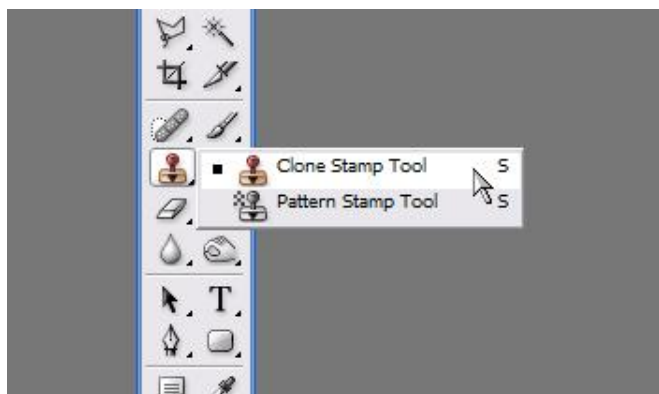
Using the Clone Tool


Sometimes it's impossible to avoid taking pictures without including an unwanted element. A typical example in urban areas is power lines. Fortunately they are usually quite easy to remove thanks to the clone tool.

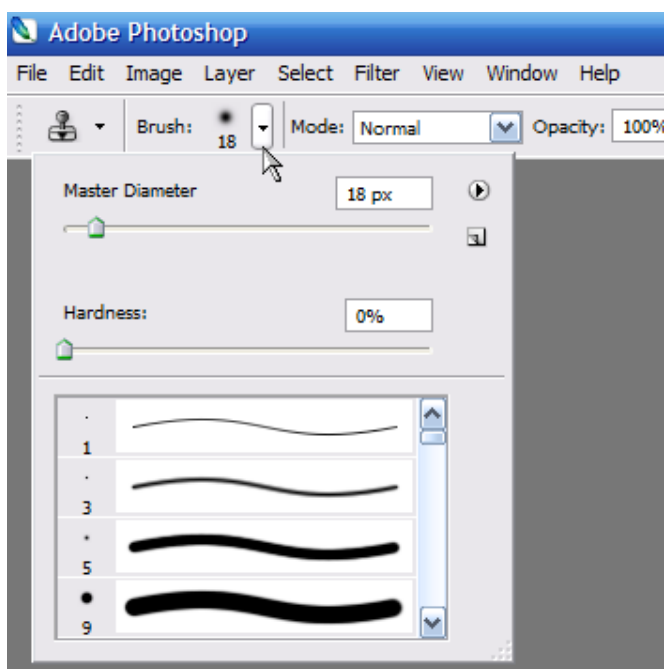
The clone tool takes a sample from a target area and copies it to another part of the image. Not only can we remove power lines but remove dust spots off the sensor or blemishes on skin. In fact, anything we like!

Historically photographers used to paint the negative to touch up any problems so a little digital improvement is not new territory. The key to successful cloning is subtlety. Over use will be obvious and open you to accusations of your photo being a fake.

Cloning in Photoshop



- Select the clone stamp tool  from the tools menu.
- There are two clone tools, the 'clone stamp' and the 'pattern stamp'. Click on the small black arrow in the corner and drag your mouse to open the choice of tools and make sure you select the correct one.



- Adjust the brush size so it's as small as it can be while still being big enough to copy enough area to cover up problem.
- Use a soft edge brush. You can reduce the hardness of any brush using the hardness slider.




- Position the cursor over the area you are going to copy.
- Press and hold down the alt key. Notice the cursor changes into a cross hairs target.
- In this example the cursor is in the top left of the picture. It's important to choose an area that will blend invisibly with the area you are covering up.
- With the alt key still held in and your cursor positioned left click you mouse. This copies the area.



- Release the alt key and mouse button.
- Move the cursor over the problem area you want to clone out.
- Click the mouse button again and the target area will be pasted.
- Notice the gray cross appears when you click marking the copied area.
- Repeat this procedure to clone out the entire problem.
- You can also click and drag which is especially useful for removing power lines. The gray cross will follow the clone tool marking the area being copied. Just make sure the gray cross stays on an area that you want to clone.



- There's a cool tool in Photoshop to help blend small blemishes called the healing brush . It's great for spots and dust specs too. It's a cross between the clone tool and a paint brush. Use it to paint over the problem and it will guess what should and shouldn't be there. Because of this it works really well when you have a contrasting spec on a plain background, such as a dust spec in the sky or acne on a face.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=28>

Correcting Lens Distortion

The human eye sees the world through a curved surface but the brain corrects and keeps everything straight and level. A camera lens also bends the world it sees to make it fit onto the sensor. The distortion is more obvious as the angle of the lens becomes wider.

Photoshop CS2 (version 9) has a tool called Lens Correction and can be found in 'Filter>Distort>Lens Correction'. Adjust the sliders until the image looks right. The vertical perspective is useful for tall buildings.

This tutorial can be used on previous versions of Photoshop that do not have the Lens Correction tool.

Correcting Lens Distortion in Photoshop



- Open your image 'File>Open'.
- Notice the towers of Tower Bridge are not vertical due to the lens distortion
- Duplicate the photo to a new layer, 'Layer>Duplicate Layer'.



- Click 'Edit> Transform> Distort'.
- A box will appear around the edge of the photo.



- Click and drag the top left and top right corners out until the vertical lines look right.
- Double click within the transform box to apply.



- When you're done you should have removed the distortions.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=30>

Blending Multiple Images

Another great advantage of digital is the ability to easily blend several images into one. There are many reasons to blend multiple images, creating what can only be called digital art, where several incongruous images are blended for artistic effect. In this tutorial we're going to look at using post processing to simulate the same effect as using a graduated neutral density filter (ND). A non graduated ND filter reduces the amount of light entering the lens without adding any color tint and is usually used when slow shutter speeds are required. ND filters are graded by how much they reduce the light and are rated in stops e.g. ND2, ND4 etc.

A graduated ND filter is divided into two halves. One half reduces the amount of light while the other half has no effect. The transition between the two halves can be abrupt or very smooth. The primary use for this type of filter is when the scene you want to shoot has a large difference in brightness in one half to the other. This is typical when shooting sunsets or mountain scenes. If you expose for the bright sky your foreground will be underexposed and if you expose for the foreground the sky will be 'blown out', or overexposed. The graduated ND filter lets you reduce the light in half the scene so the exposure for the bright area becomes the same for the darker area.

If you don't have a graduated ND filter, or forgot to pack yours that day, then you can still capture those tricky scenes by taking multiple pictures, with each exposed for the different brightness ranges in your scene. Ideally take one picture and expose for the darkest area, take a second and expose for the brightest and take a third set between the two. The middle image is used to smooth the transition between the two areas. In post processing we can put all three back together using only the best from each. It will help your final picture if you place the camera on a tripod, to keep the scene identical for all three.

Only adjust the shutter speed to change the exposure not the aperture or the change in depth of field will be noticeable.

You can have some success by taking a single picture and using curves or levels to create multiple images, where each has been adjusted for the different areas in the picture. Then blend them together as if you had taken them using different settings.

There is an advantage to the post processing technique over using a filter. The graduation line on a filter is typically straight. but in post processing we can make the line of transition any shape we like. This is really useful when trying to make well exposed images of irregular shaped objects such as statues or buildings.

Please read the Photoshop primer before starting this tutorial.

Blending Multiple Images in Photoshop



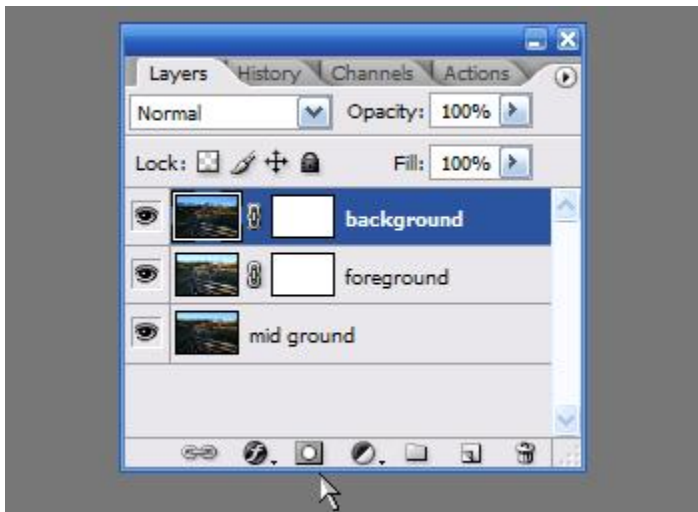
- Open your images and make any curve or levels adjustments to all of them.
- When you're happy flatten and copy each to a new layer in a single new document, ctrl+a to select all, ctrl+c to copy, ctrl+n (only once) to create new document, ctrl+v to paste.
- This image was taken while exposing for the sky and the background.
- Notice the underexposed foreground.




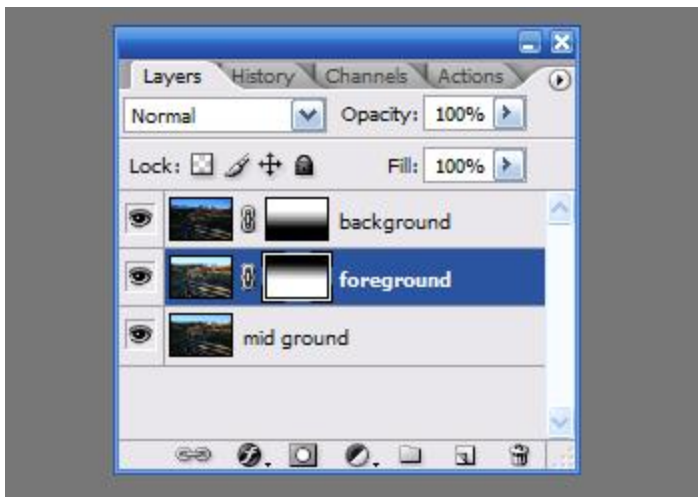
- Exposed for the mid ground.
- Without an ND filter or knowledge of this technique, this would be the best we could hope for.




- Exposed for the foreground.
- The sky has lost the depth to the blue and the snow on the mountains is overexposed.



- Open the Layers window, 'Window>Layers'.
- For this example I've renamed the three layers and deleted the white background layer that is created when you make a new document. The three photos layer are called mid ground, foreground and background and are so called to represent the area of the image they are exposed for.
- Arrange the layers so background is on top, foreground in under that and the mid ground is at the bottom of all three.
- Select the 'foreground' layer.
- Click the layer mask icon  at bottom of the layers window.
- Notice the white box appears next to the layer preview in the layers window.
- Add another layer mask to the background layer.



- Click the white layer mask box to select it. When it is selected it has a white border.
- A black layer mask is 100% opaque and hides the image while a white layer mask is transparent. You can use a paint brush, pencil or fill tool to change layer mask. Shades of gray also change the effect of the layer mask by varying degrees. If you want to start again fill the layer mask with white.
- Select the gradient fill tool  it's hidden under the fill tool (see primer). Half fill each layer, only half will be visible and graduation with provide a smooth transition.

- Fill each mask opposite to each other so the white half is showing the correctly exposed half. If you fill too much or too little simply repeat until you get it right. Look at the layer masks in the example.
- The mid ground layer is behind the other two and will cover the transition between the two layers. Toggle the eye for this layer on and off to see the effect it has.



- Flatten the image, 'Image>Flatten Layers' and save.
- The final image should be blended smoothly and provide an image correctly exposed for all areas..
- Use the same technique on difficult shapes such as statues. Just paint the layer mask with a soft edged paintbrush.

Discuss this tutorial here

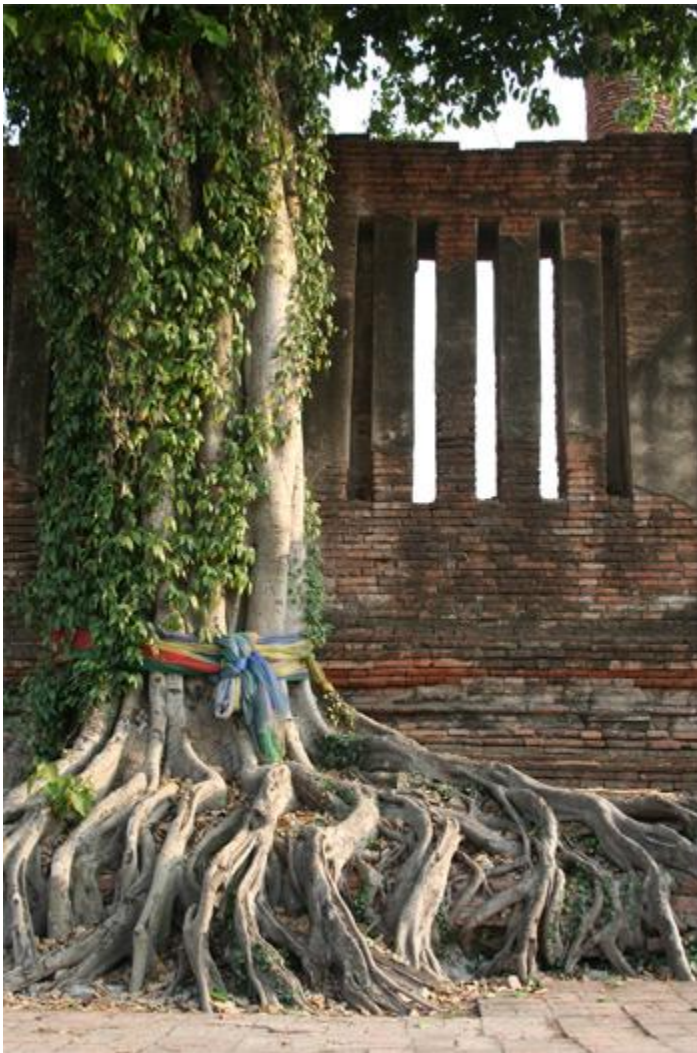
<http://goingmanual.com/photo/board/viewtopic.php?t=32>

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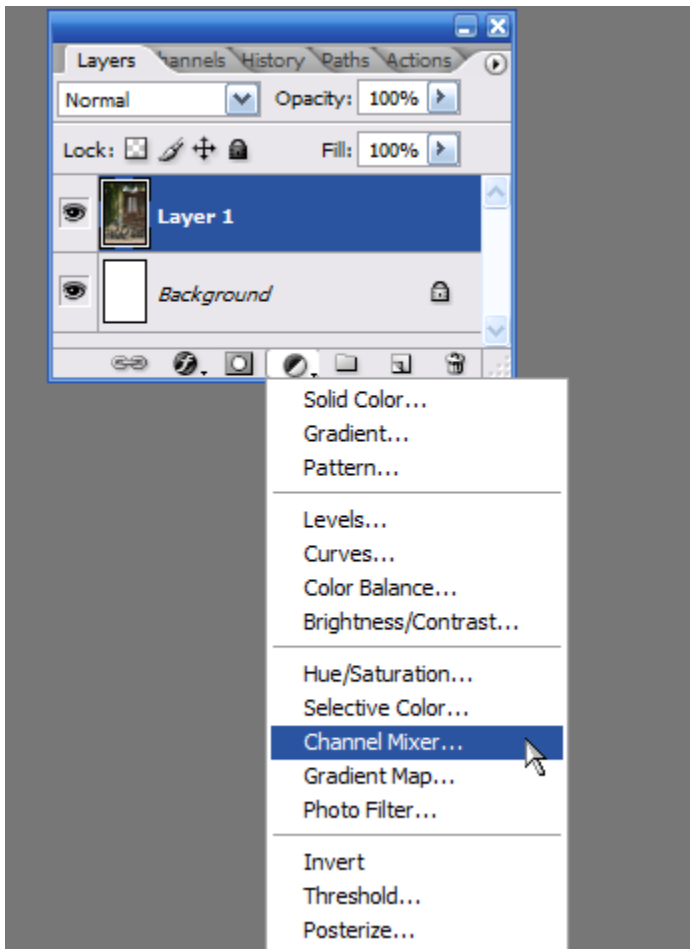
Black and White Conversion

Black and White photography has continued to be popular long after color film was introduced. Reducing the world to shades of black and white is a matter of personal taste. It can be very flattering for portraits and images where the contrast is a plus. It's also a handy way to remove distracting elements of the composition, such as a group photo where one person is wearing a very bright shirt.

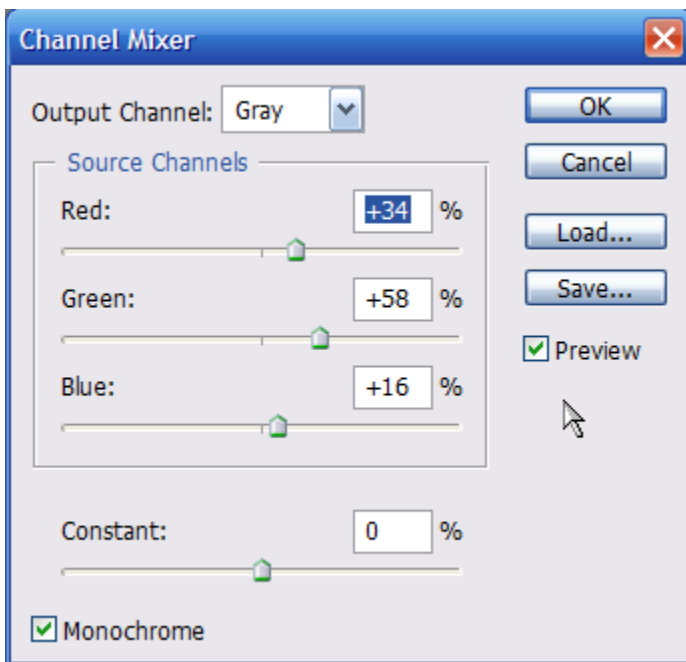
Black and White Conversion in Photoshop



- Choose a photo that you think will look good in black and white.
- I chose this one because I like the contrast and texture in the tree roots and the texture in the leaves. The sky is blown out and white which is unattractive in a color photo but is less of a problem in a black and white.



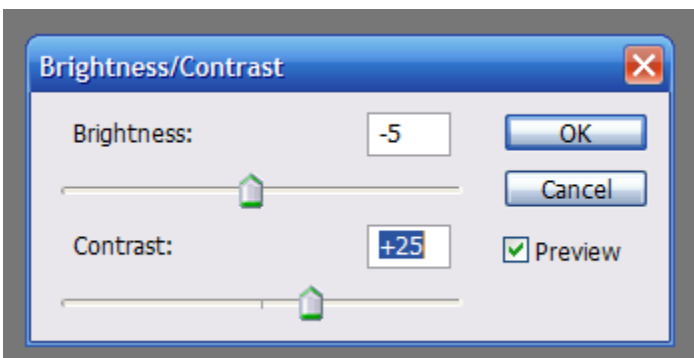
- You can make a levels adjustment directly on your photo layer using 'Image>Channel Mixer' but there is a great feature in Photoshop that lets us have a little more control.
- At the bottom of the Layers window is a small half black, half white circle with a tiny drop down arrow. Click on it to reveal the options available. These are all 'Adjustment Layers' meaning any changes you make don't affect your photo directly until you choose. You can also access the Adjustment Layer option in 'Layer>New Adjustment Layer'.
- There are lots of advantages to Adjustment Layers, you can edit it at any time, just click on the icon in the layers window. You can reduce their effect simply by reducing the opacity and if, after you make an adjustment, you're not happy, delete the layer and start again.



- Click the monochrome box and the image will de-saturate.
- Reduce the Red 100% slider and increase the blue and green
- You can now play with the sliders to adjust the different colors that previously made up the image.
- When all 3 values are added the total should still be equal around 100.
- Leave the contrast slider at 0



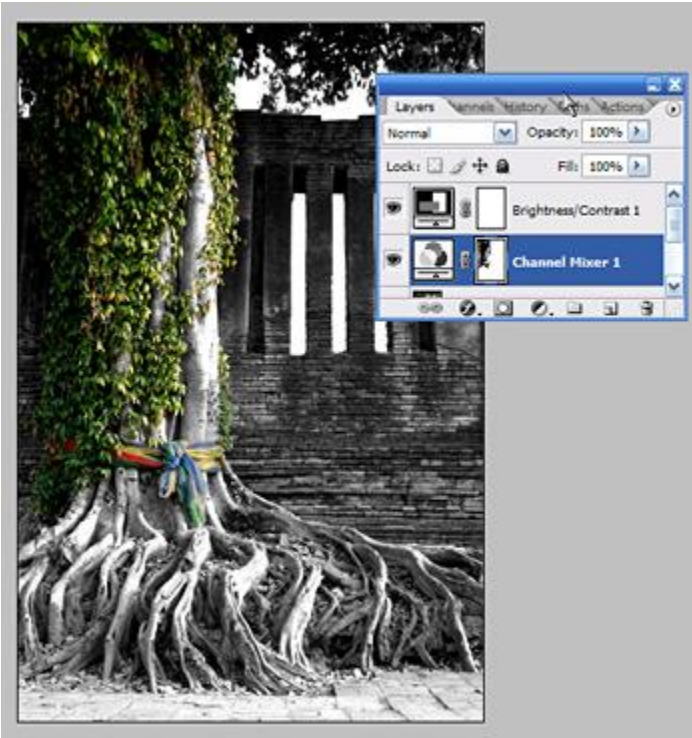
- Try to keep the dark areas dark and avoid over exposing the lighter areas.
- You may need to experiment until you're happy.
- Click OK when you're done



- If you need to there is one more step to improve the contrast and avoid 'flat' black and white pictures.
- Open another adjustment layer. This time the 'Brightness/Contrast' layer. Also accessible through 'Layers> New Adjustment layer> Brightness/Contrast'.
- Make sure the preview box is ticked
- Move the 'Contrast' slider up slightly and watch how the image changes.
- When the black areas are pure black you've done enough.
- You can also use the brightness slider to reduce the effect if it looks too bright.



- The contrast can add a nice effect but it's easy to over do. Your dark areas should be black and light areas should be white or near white.
- When you're done, click OK.
- Flatten the image 'Image>Flatten Image' and save.



- Another great feature of Adjustment Layers is how they can affect only selected areas.
- In this example I've painted the adjustment layer black, on the areas in the image I'd like to remain colored. The black paint doesn't show on the image but on the adjustment layer preview in the layers window. If I use black paint the adjustment layers effect is decreased to zero, white areas show the full effect of the adjustment.
- If I make a mistake while painting I just have to change my brush color to white and I can increase the effect to 100% again. In this case, re-apply the channel mixer effect.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=34>

Sepia Conversion

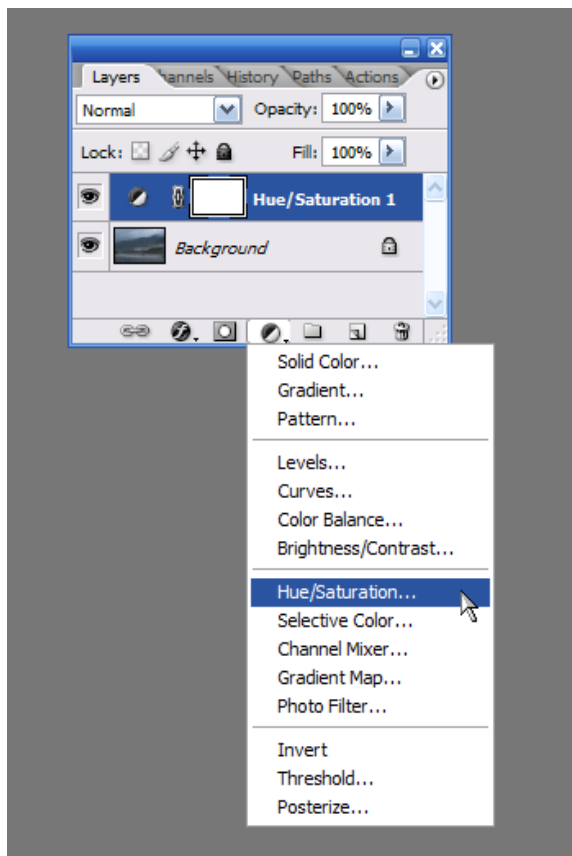
Sepia is a monochrome photo with shades of brown instead of gray. The process started in the 1880s when the pigment from the Sepia cuttlefish was used to tint during the printing process.

Please read the Photoshop Primer if you're new to Photoshop, before doing this tutorial.

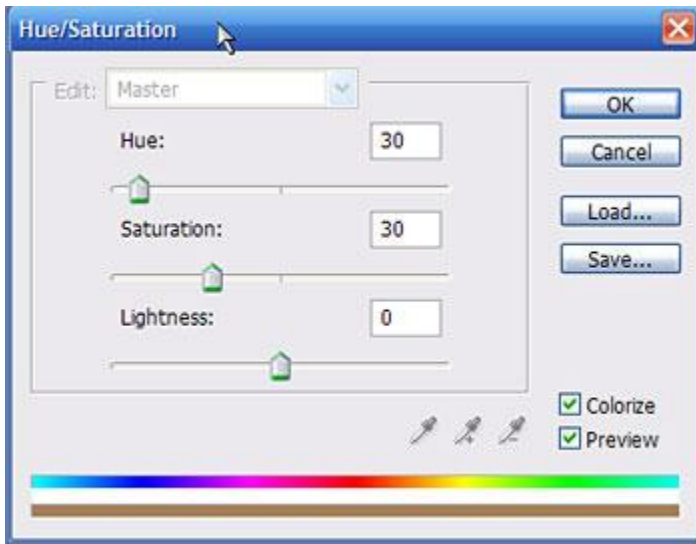
Sepia Conversion in Photoshop



- Open your image
- If you think the image will benefit, convert to grayscale using the channel mixer (see tutorial) or adjust the contrast, 'Layers>New Adjustment layer>Brightness/Contrast'.



- Open a new adjustment layer, 'Layers, New Adjustment Layer, Hue and Saturation'.



- Click the 'Colorize' box
- Set the hue to 30
- Adjust the saturation until you have the sepia tone you like.



- If you converted to black and white you can adjust the opacity and see if you like the effect.
- Flatten and save.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=36>

Reducing Noise

Electronic noise is one of the major drawback of digital photography. The very process that writes the image to the sensor also creates electronic interference that causes grain, reducing quality. ISO above 400 and longer shutter speeds can create excessive noise. Using a low ISO and faster shutter speeds helps to reduce noise but in low light photography it's very difficult to avoid.

Fixed lens cameras and point and shoots typically have small sensors. The photo receptors are packed into a smaller area than a DSLR resulting in noisier images. The larger sensor in a DSLR allow more distance between the photo receptors so there's less interference and less noise.

Higher ISO produces noise in the same way increasing the volume on a radio increases background hiss. Longer shutter speed produce noise because the photosites have longer to interfere with each other. Both have a similar result, unwanted grain. It's possible to reduce noise in post processing using proprietary software or using techniques to blur the grain away.

There are many programs that act as a 'plug in' or helper program that vary in cost. All claim to reduce noise but the results can vary. Check independent reviews for any software you consider purchasing. Those that do work can save you lots of time and produce pretty good results. If you don't want to spend more money then there is an excellent free noise reduction plug in for The Gimp. It might be worth looking at that program for your noise reduction needs and the plug in is quite simple to use. Have a look at the noise reduction tutorial for The Gimp to learn more. Just remember if you're moving images between programs, save in a lossless format like PNG or TIFF not Jpeg!!

Photoshop CS2 (version 9) has a noise reduction filter but for the purpose of this tutorial I'll make this backward compatible with previous versions of Photoshop. There are lots of different ways to try to achieve less noise.

Reducing Noise in Photoshop

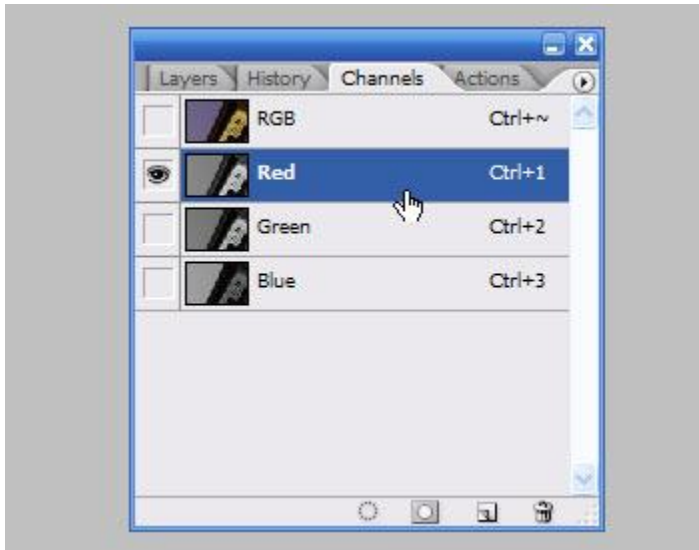


- Here is the full image and the Exif information. As I remember I'd forgotten both my watch and a flashlight so was counting the exposure time. I was using the bulb setting, a tripod and remote switch, while trying to remember not to be so forgetful!

- Camera Make: Canon
- Camera Model: Canon EOS DIGITAL REBEL XT
- Image Date: 2005:07:20 23:40:57
- Flash Used: No
- Focal Length: 18.0mm
- CCD Width: 22.20mm
- Exposure Time: 89.000 s
- Aperture: f/11.0
- ISO equiv: 400
- White Balance: Auto
- Metering Mode: Matrix
- Exposure Mode: Manual

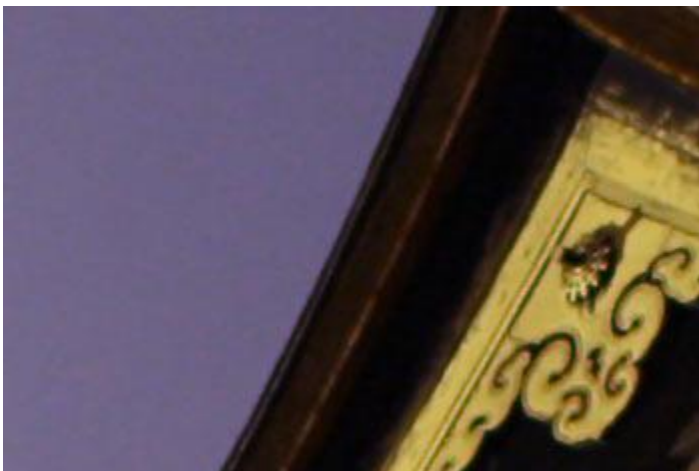


- A close up reveals the grainy noise.
- This is an 'actual pixels', 100% view of the original image.
- Noise is more noticeable on areas with less detail.

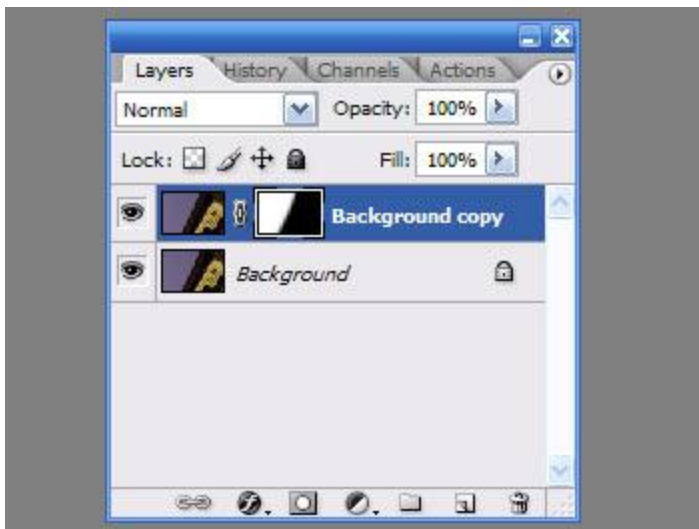


Method 1 - Channels


- The image is recorded in three color channels, Red, Green and blue. Often most of the noise is in the one channel (usually blue). If we blur just one channel then the detail is preserved in the other two.
- Open the channels window 'Window>Channels'
- First click the RB channel then click the individual channels to see which one has the most visible noise.
- Use the 'Gaussian blur' filter, 'Filters>Gaussian Blur' and move the slider until the noise is reduced. Don't worry if the rest of the image becomes blurry.



- In this example I chose the green channel and applied a gaussian blur of 1.5.
- The image will need to be sharpened and saved.



Method 2, Channels & Layer mask

- It's easy to remove the noise from area without detail using a layer mask to protect more detailed areas from becoming blurred.
- Duplicate the background photo layer, 'Layer>Duplicate layer'.
- Open the layer window 'Window>Layers'
- Click the quick layer mask icon  at the bottom of the layers window.
- Click on the layer mask (the white box) to select it.

- With the layer mask selected, use a black paint brush to paint the mask where you do not want to apply the blur.



- Follow the normal channels blur instructions above. You can blur more than one channel as the detailed part of the image will remain unaffected.
- Paint the white area of the mask gray to apply a slight noise reduction effect.
- I prefer to use a plug in to remove noise from an image but this works well enough for some images.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=38>

Cropping

Often after reviewing your photo on your PC you'll notice a different framing would have helped the composition. If reducing the size of the scene is the improvement, then you can make the change using an image editor. You may want to crop to present your image in one of the many different aspect ratios or for a bespoke framing. Any cropping will permanently reduce the number of pixels and so reduce the potential print size for an image.

Cropping for Different Print Sizes.

If you're taking using a 35mm camera the image is in a ratio of 3:2. a print size of 6"x4", (3x2)x(2x2) is the same ratio as 15"x10", (3x5)x(2x5). Both will print the full size image as it is when you look through the viewfinder, on your PC or camera's LCD monitor.

Mathematics and art have a close relationship. The ratio 1:5 is almost the Golden Ratio, or divine proportion, a bizarre thing that crops up throughout math and nature. The actual ratio is 1.618 and has fascinated intellectuals for over 2,400 years. The math was done by Fibonacci (1170-1250 A.D.) who is now closely associated with the ratio but art following the same ratio dates from 490 B.C.

The Golden Rectangle used in 35mm is thought to be a shape that is the most aesthetically pleasing to the human eye. Curiously the most common print size for anything other than snapshots is 8x10 a 4:5 ratio. If anyone knows why I would love to hear, we seem to be bucking a long established trend! One theory is it comes from the old large format of 16x20 photographic plates, cut in quarters to save money While others just think it's a more aesthetic ratio for portraits.

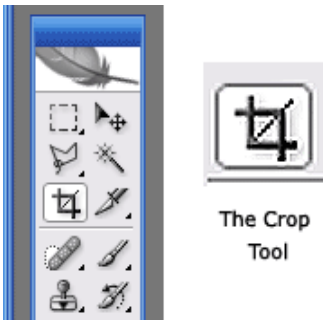
Read more about this at Wikipedia

http://en.wikipedia.org/wiki/Photographic_printing

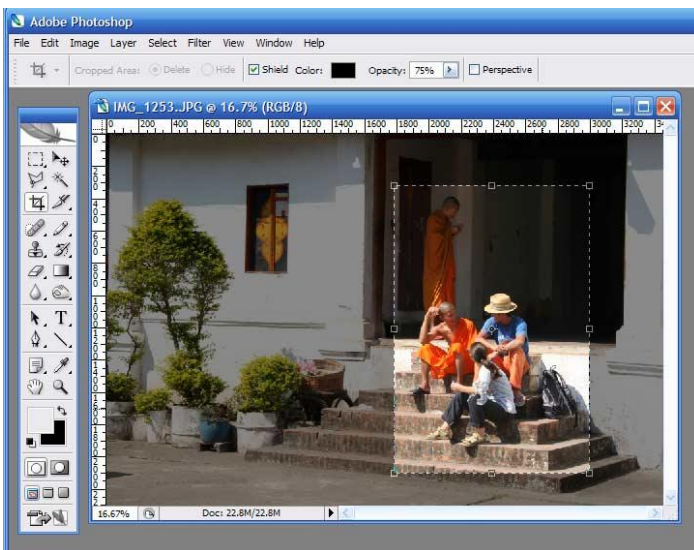
Regardless of the origins and trends, 8x10 and 11x14 and other non 3:2 ratio print sizes are very common, so you'll need to know how to prepare your images accordingly.

Cropping in Photoshop

A Simple Crop

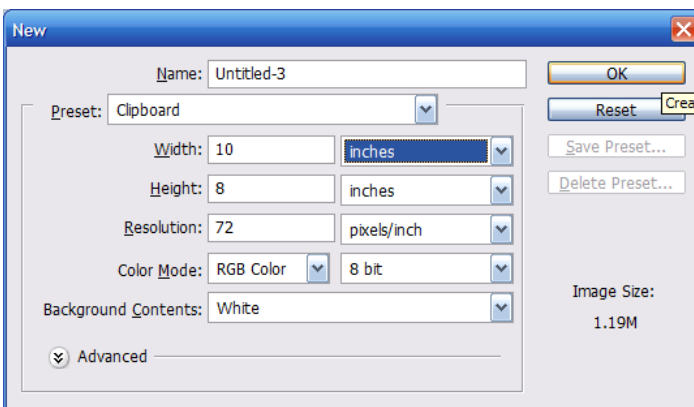


- Open your image
- Choose to crop tool from the tools menu by clicking on it in the Tools palette.



- Move the mouse approximately to one corner of your proposed crop and click and drag to the opposite corner, then release the mouse.
- You'll have a preview of your crop. Now is the time to fine tune your crop using the squares on the corners or in the middle of the edges.
- Once you're happy with your crop double click within the dotted square and you're done.

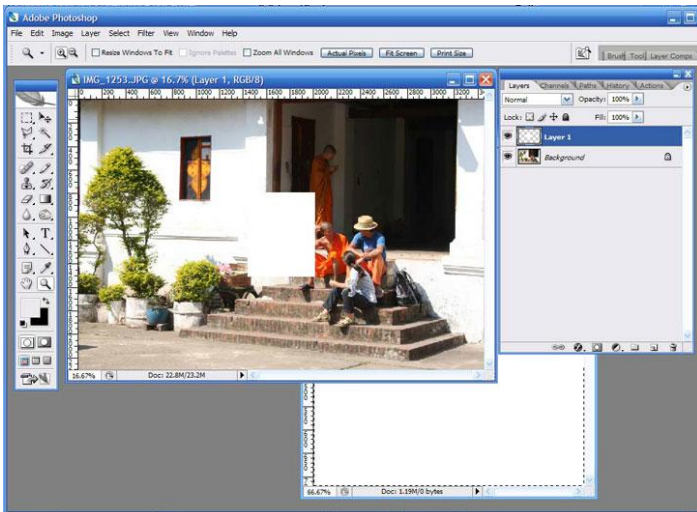
Cropping for Different Print Sizes in Photoshop



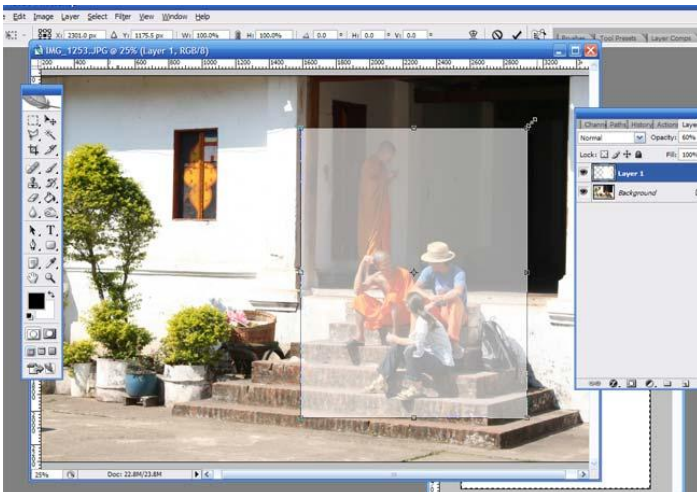
- First open the photo you would like to crop in Photoshop.
- Next we're going to create a new image to use as a guide to use to help us crop to the right size.
- Click File>New
- Set you units to inches.
- Enter the dimensions you would like to print at. In this example we're going to use 8x10 but you could use anything. Enter the correct height or width depending on the orientation of your image and click OK. You don't


need to change anything else.

- You can of course use any numbers that fits your chosen ratio for example 800pixels X 1000 pixels.

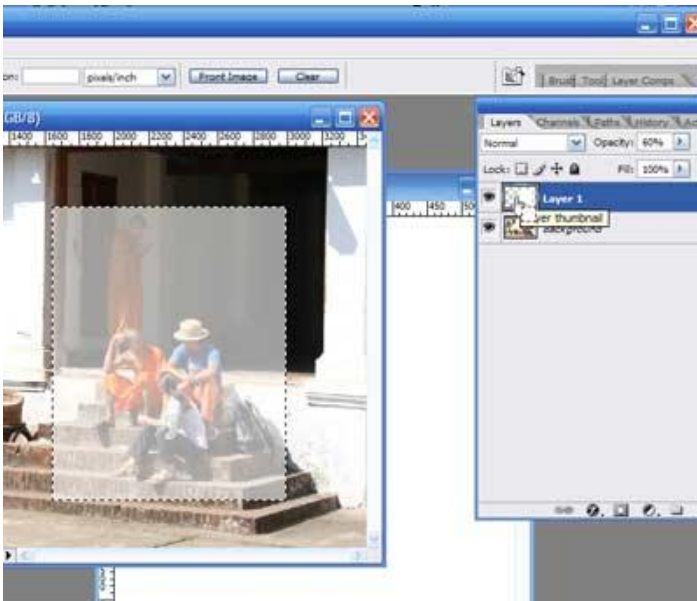


- Select all (ctrl+a) or Select>All
- Copy using ctrl+C or Edit>Copy
- Click anywhere on your photo to make it's active. You may need to minimize your guide image to do this.
- Paste the size guide onto your photo layer. A new layer will be created, you can rename it 'guide' if you want.

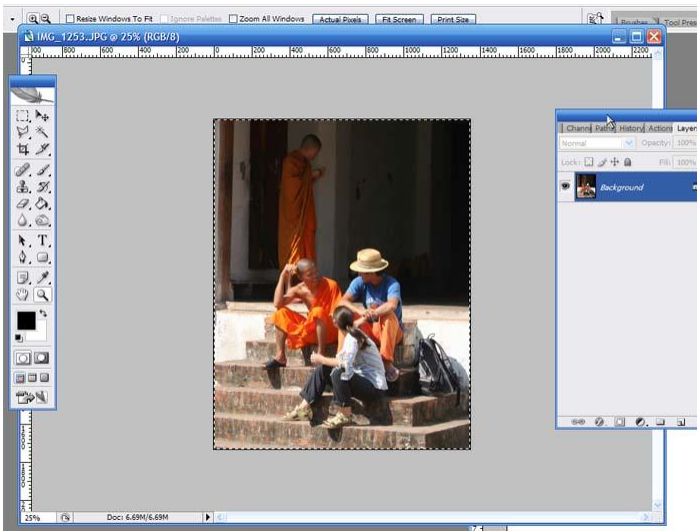


- Make sure you have the guide layer selected. (see Photoshop primer)
- Change the opacity in the layers window to 60%. The guide will go translucent, to help you position it accurately.
- Using the move tool,  move your layer into one of the corners of your proposed crop.
- Click Edit>Transform>Scale a box should appear around your guide layer (make sure you have the guide layer selected in the layers window).
- You should have already positioned you guide layer over one corner of your proposed crop. Now move the mouse to the opposite corner. It will turn into a double arrow.
- Hold down the Shift key and keep holding it down until told to release it.
- Left click and drag the guide layer corner until you have reached the approximate size you want.
- Release the left mouse button
- Release the shift key.

- The use of the shift key will maintain the aspect ratio when resizing. If you let go of Shift too soon. Undo until you can undo and try again.



- Reposition the guide layer using the move tool if necessary and repeat the guide sizing steps until you're happy with your proposed crop.
- Open the layers window, Windows>Layers.
- There is a small preview of the layer in the layers window.
- Move your mouse over the preview and hold down ctrl. Notice a small square now appears next to the mouse.
- Left click and the edges of the guide layer are selected. Notice a dotted square on your photo around the guide.



- Click Image>Crop and your image is cropped at a 4:5 ratio, ready for 8x10 printing.
- Delete the guide layer by moving the mouse over the guide layer in layers window, right click and choose delete layer.
- Remember to use the history (Windows>History) to undo any mistakes you make.

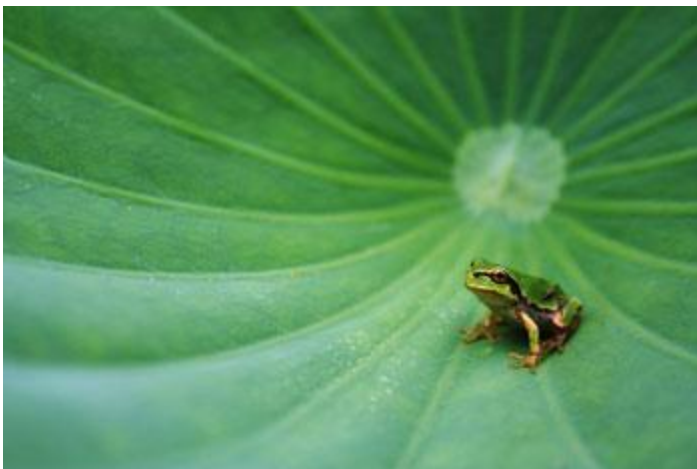
Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=40>

Sharpening

Sharpness of an image refers to the sharpness of focus. With digital you have both sharpness from the lens and from how the image is processed by the camera's brain. How your camera sharpens an image is different from model to model. Simple point and shoot cameras almost always sharpen the image 'in camera' while higher end camera let you choose how much the camera sharpens. If the image was not focused properly in the first place then it's unlikely you can correct for that with software but you can take manual control of how the sharpness is applied to your image. Different images and image sizes require a different amount of post processing and that's true for sharpening too. If you can consult your manual for how to turn off, or reduce, in camera sharpening. A digital image is made of tiny squares called pixel (picture elements) so all straight lines become a series of steps when the image is magnified. Anti-aliasing is a technique computers employ to smooth the transition between these steps but can often lead to a soft, out of focus image. Sharpening software works by finding and increasing the definition in edges. Edges in the images are changes in color and brightness along distinct lines. The software finds and makes the edges more defined giving a crisper more in focus look to your image. If the sharpening effect is used too strongly then these edges become exaggerated and halos begin to appear so it's important to apply the technique to the area that was intended to be in focus when taking the picture, and to view it at 100% zoom when applying.

Sharpening in Photoshop



- Here is the full image and the Exif information.
 - Camera Make: Canon
 - Camera Model: Canon EOS DIGITAL REBEL XT
 - Image Date: 2005:07:20 07:40:08
 - Flash Used: No
 - Focal Length: 54.0mm
 - CCD Width: 22.20mm
 - Exposure Time: 0.0080 s (1/125)
 - Aperture: f/5.6
 - ISO equiv: 200
 - White Balance: Auto
 - Metering Mode: Matrix
 - Exposure Mode: Manual
-
- A close up reveals the slight softness.
 - This is an 'actual pixels', 100% view of the original image.



- The subject is well focused to begin with.
- Sharpening will return the image to its pre anti-aliased state while you control how much of the effect is applied.



- Zoom in 100% and use the scrollbars to move to the part of the image that you want to sharpen. Typically this is the area you focused on when taking the picture.
- The preview window is small but you can see the changes on the image as you make them.
- Open the Unsharp Mask. 'Filter>Sharpen>Unsharp Mask'.
- There are 3 sliders, Radius, Amount and Threshold. Radius is the distance from the edge the effect is applied to, amount is how much the effect is applied and threshold is used to reduce sharpening on smooth areas.
- Adjust the sliders until you are happy with the amount of sharpening. Be careful not to over sharpen.
- Toggle the preview on and off to compare with the original.
- When you're happy click OK to apply.
- Use the undo history dialog, 'Window>History', to do a before and after.
- Zoom in to 100% and look at different areas.
- Be sure the sharpening look good across the whole image with no halos or obvious sharpening effects.
- If you're not happy with the effect, undo the sharpening and try again.



- Flatten and save.
- Photoshop CS2 (version 9) has a sharpening feature called 'Smart Sharpen'. It's used in a similar way to the Unsharp mask but can produce better results. If you have CS2 then try Smart Sharpening. It has a better ability to detect where it should apply the sharpening effect. The Unsharp mask may still be useful when smart sharpening is being too smart for its own good.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=40>

Working With RAW Files

RAW files are just as the name would suggest raw data and could be described as the digital negative. The image is recorded as 3 colors; red, green and blue. Most camera will convert that raw data into a Jpeg and save to the memory card. If you can save the data directly without the camera making the changes for you then you'll have more control over your image. In the saving tutorial we looked at different formats to save your image in. RAW files have no compression (some camera brands do compress slightly) and are quite large. My camera produces an 8Mp image and a 12Mb RAW file.

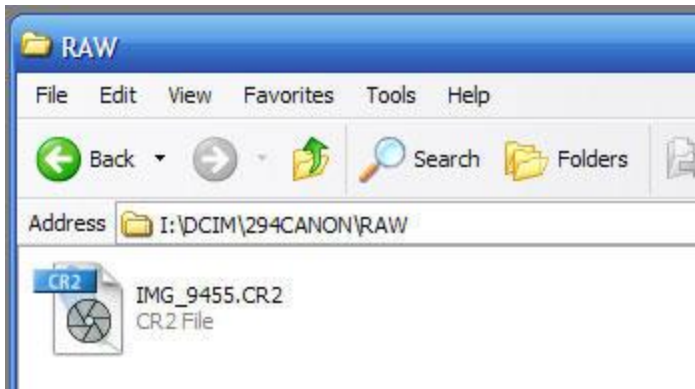
RAW Has advantages and disadvantages the large file size is one issue increasing the size required to store your images and decreasing the number of shots available per card. Another issue for RAW is each shot has to be processed before you have a photo ready to print. I typically find I process my Jpegs so a RAW conversion is just a different work flow and not usually much more effort.

The advantage of RAW is the flexibility to correct your image after you take it, without destroying any of the data. You can set white balance after the shot is taken for different lighting types and it will have the same effect as if it was adjusted before. You can also adjust the curves, shadows, brightness, saturation and even the exposure all before the image is converted to a compressed Jpeg. You can choose to save the image as raw data to adjust in the future or as a lossless TIFF. Adobe has introduced the DNG format in an attempt to standardize the different RAW formats currently used by different camera manufactures.

The adjustments in exposure represent a big advantage of RAW. As more information is recorded in the image compared to Jpeg then you have a greater dynamic range to recover from any errors in exposure made while taking the picture. You can make much larger adjustment compared to levels and curve adjustments on an image taken in Jpeg.

If you camera is capable of taking RAW pictures then it likely came with software to convert the image into other file formats. Lots of different software programs are out there so you might want to look around for one that suits your needs. If your camera is new, make sure it is supported by older programs.

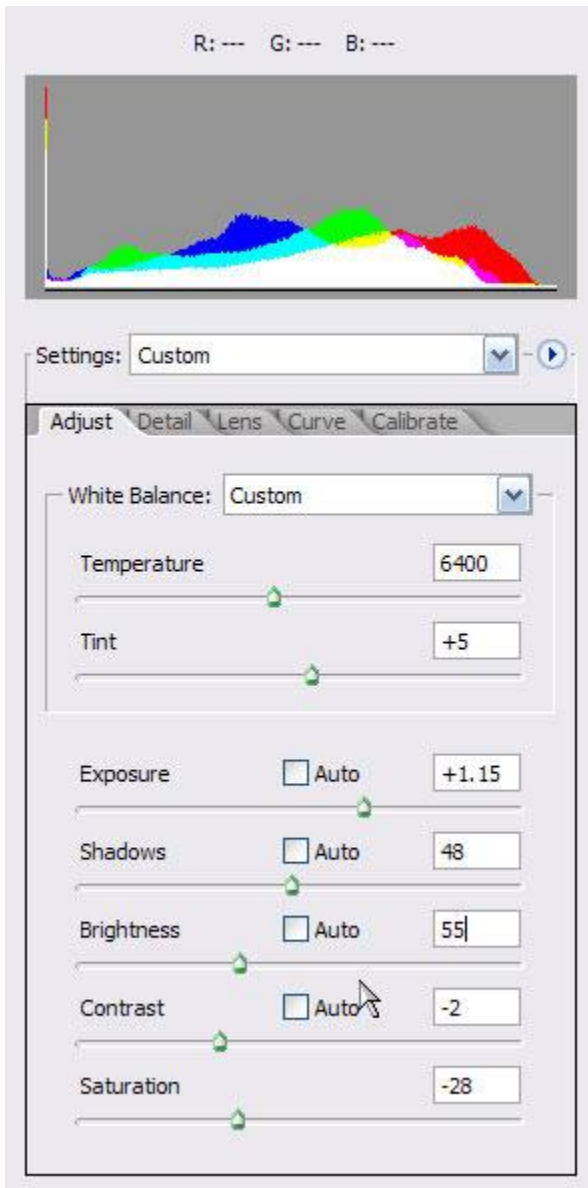
RAW conversion in Photoshop



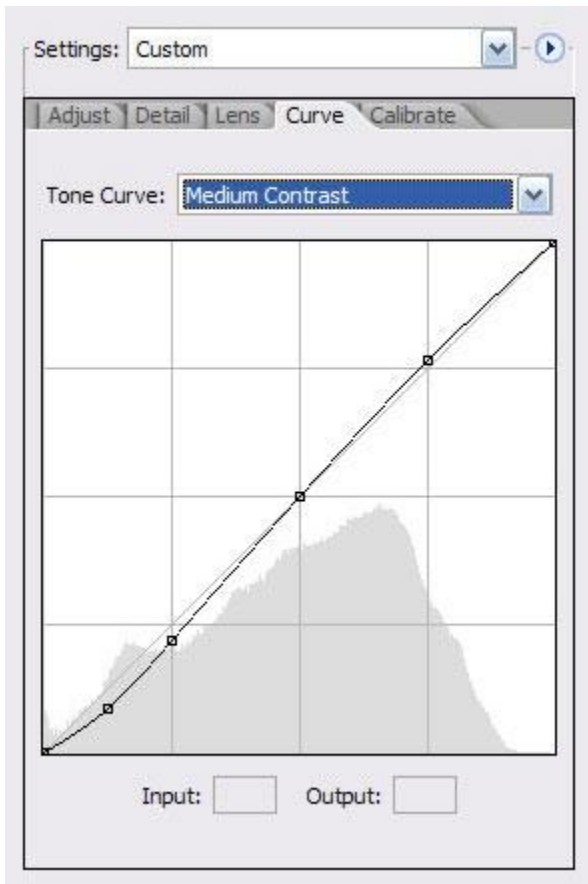
- Open your image.
- Here's how it will look if you browse the folder in Windows.
- Notice the file extension is CR2 which is a Canon RAW file type. If you use a different brand then your RAW file type will be different.
- Right click and open with Adobe Photoshop or alternatively open from within Photoshop 'File>Open'.



- When the RAW file is opened Adobe's RAW conversion program, Camera Raw, is opened.
- When you first open the image it is automatically corrected.
- If you would like to adjust the image manually then uncheck the 'Auto' boxes.



- The histogram shows the information for all three color channels. When making adjustments it's good to let the ends of the histograms reach either end, but not to stack up against it.
- Adjust the white balance according to the lighting conditions at the time of taking the picture. Use either a preset from the drop down list or set the temperature and tint yourself using the sliders.
- Use the sliders to adjust the exposure, shadows, brightness, contrast and saturation.



- Use the tabs to access the different controls.
- The final image is result of your personal taste. You have a lot of flexibility so you can produce very different results.
- When you're done click 'Save'
- Choose the format from the drop down list. DNG and TIFF are lossless while JPG will reduce quality. See the 'Saving' tutorial for more information on file types.
- If you save as a TIFF you can open and re-save the tiff using LZJ compression to reduce the file size.

Discuss this tutorial here

<http://goingmanual.com/photo/board/viewtopic.php?t=43>

A Final Word (For Now)

More tutorials will be added to the next version of this e-book. Meanwhile the website will be continually updated and you are welcome to submit your own tutorials too. Just visit the tutorials section of the forums. If accepted it will be incorporated into the site and added to the e-book, with accreditation of course.

What people are saying about GoingManual.com and e-book.

(Names represent writers internet nicknames)

Simon, the site is great. Information is well written, precise & easy to understand. Navigation around the site is simple & very user friendly, tutorials have clear step by step instructions and diagrams. As a beginner, I seem to have so very many tutorial & photo sites saved in my browser. When you start out, you really think you need to know everything at once, it can seem very overwhelming at times just learning the ins and outs of using the camera correctly, let alone all the post processing stuff. This weekend I decided to weed out my favourites box and only keep those tutorials specific to my needs at present. Your site is now at the top of a considerably smaller list. - Dragons Lair

You ninjas definitely check this site out. I JUST came across it and immediately thought to share it. I have yet to look through it entirely, but I like what I see so far. See if you can extract anything from it. - GreyGoose

This definitely looks like a winner... Oneder

Excellent site - Bluesmap

Thanks a lot for sharing this site. You have spent an enormous amount of time on this and it looks very professional. I find it very helpful especially the PS part. - Peninna

Looks like it has a lot of good info.- Dale

I was looking for a series of online tutorials on Photoshop. I think your articles will help me a lot. Start reading them right now. Thanks. - Molja

I recommend others, even experienced photogs, but those on the beginning side of the learning curve to check it out, it is worth your time to. - Bradm

The site looks excellent Simon. Loads of information that I am excited about getting my teeth into. - Fitzpayne

Man, that is a sweet site! Thanks so much for sharing that! - Steve

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To minimize the amount of post processing your photos require, and to learn more about manual photography, download 'Going Manual, A Guide to Digital Photography and Post Processing' from GoingManual.com

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