

## SHARPENING IMAGES

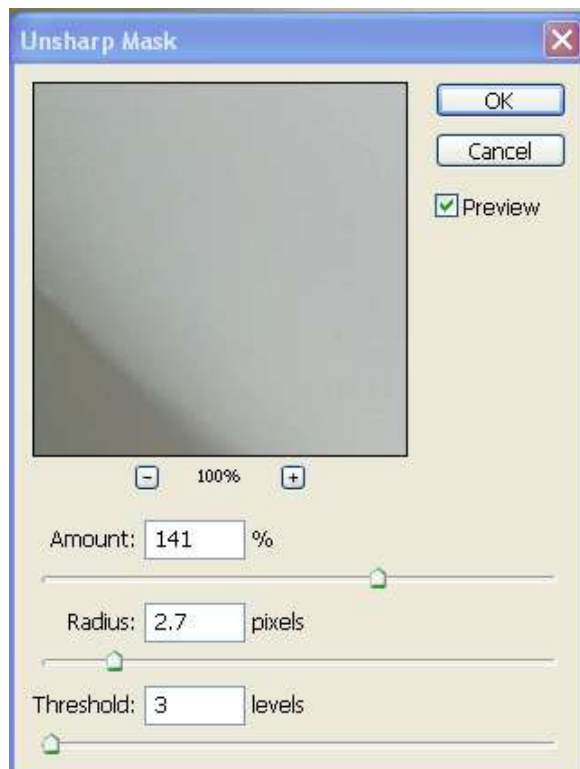
### Why Sharpen your Images?

When images are captured digitally the process is said to “soften” them. This can result in the image appearing a little blurred or unfocussed. Sharpening reverses this effect and brings the image “back into focus”.

By sharpening images we enhance their appeal by helping them stand out from the page and take on an appealing 3D appearance. It is however possible to over-sharpen images and damage them, so understanding how to sharpen effectively is important. It’s important to realise that sharpening will not fix an image that was not in focus when it was taken, so it’s still important to capture the image correctly in the first place.

### Options for Sharpening

Photoshop like provides a number of tools and methods for sharpening images, four of which are found under the “Filters|Sharpen” menu: Sharpen, Sharpen Edges, Sharpen More and Unsharp Mask. The first three tools are relatively unsophisticated and allow you no control over how the image is sharpened. I would suggest you ignore these and instead learn how to use the “Unsharp mask”.



An example of the Unsharp Mask filter is shown here. This provides three sliders that can be used to adjust how the sharpening effect is applied to your image.

Whilst you are first getting used to the Unsharp Mask useful settings to try are:

- 75% - 150% for the Amount. The further to the right the slider moves the more severe the sharpening effect is.
- 1.0 – 2.0 for the Radius. Again the further to the right the slider is moved the greater the effect.
- 3 – 7 for Threshold. This time the further to the left the slider is moved the more severe the sharpening effect.

Whilst you can use figures outside these ranges to good effect I would suggest getting the hang of the tool

first and these suggested ranges will allow you to do that.

Whilst setting the level of sharpening to be applied it is useful to have the preview option applied so that you can see the effect on your image. I also like to have the image at 100% on the screen with an area of detail displayed. This helps me better

judge when the sharpening effect is at the optimum level. Once you have selected the desired settings clicking OK will apply your settings to the current image.

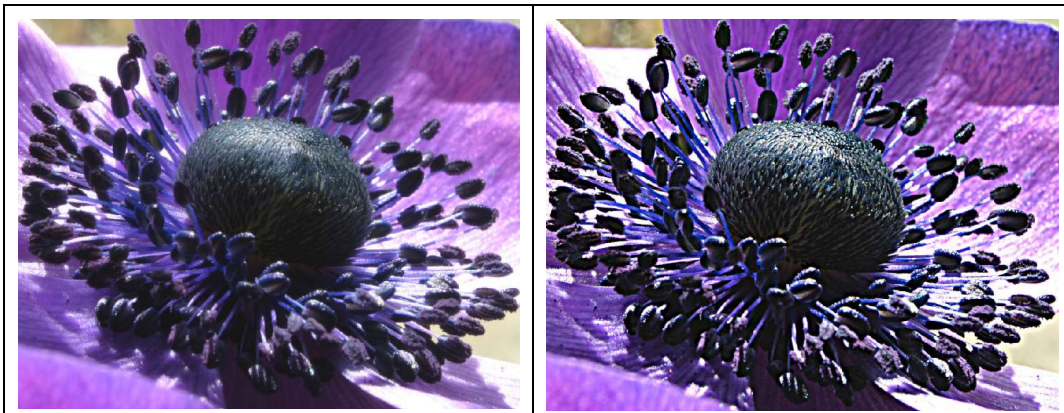
## Improving your Sharpening Technique

Whilst the above technique will sharpen and probably improve your images there are a few points that can improve your overall results dramatically.

The first improvement is to perform your sharpening as the final step in your image manipulation e.g. after you have adjusted the contrast and colour etc. The reason for this is that each time you adjust an image you “damage” the images information slightly. Sharpening can help visually correct this to some degree.

The second tip is to always do your editing in 16 bit mode. This will of course only be useful where your images are captured in 16 bit and your image editing software supports this. If you are using a quality scanner you should have an option to capture images in 16 bit mode. With Digital SLR cameras you should always shoot in RAW format and then later convert your images to 16 bit TIFF files for editing. If you don't have either of these options open to you don't worry as you should still be able to achieve great results if you follow the rest of the advice.

The final point is that sharpening like other editing will damage your images and can introduce the “halo effect”, sometimes referred to as sharpening artefacts. With care you can avoid this. Shown below is an example of the effect where sharpening has been poorly applied.



This image is of the centre of a blue flower. The image on the left has yet to be sharpened and appears soft and slightly blurred although it is still of an acceptable quality. The image on the right has been sharpened but the effect is too harsh and sharpening artefacts have been introduced. Once this damage has been done it can't be reversed (other than by using the “Edit|Undo” option).

The trick to sharpening an image without damaging it in this way is to first convert the image to Lab mode rather than RGB (which is the colour mode for most images). When in RGB the image information is split into three channels; Red, Green and Blue. Each channel describes how much red, green or blue is present to make up the colour of each specific pixel. Sharpening works by increasing the contrast between certain pixels and hence when applied to the RGB channels directly it can damage the image, creating the halo effect.

Converting to “Lab Color” mode causes the image information to be split into three channels, one of which is a “lightness” channel describing how light/dark each pixel

is. By restricting the sharpening effect to just the lightness channel the damage to the picture is greatly reduced.

To do this in Photoshop:

1. Select "Image|Mode|Lab Color" from the menu.
2. Display the Channels window by selecting "Window|Channels" from the menu.
3. Click on the "Lightness" channel in the channels window to select it. The image should turn black and white and may be difficult to see depending on the contrast
4. Select the "Unsharp Mask" from the menu and enter the desired settings.
5. Select "Image|Mode|RGB" from the menu to turn the image back to RGB.
6. Save your sharpened image.

The images below illustrate the improvement that can be gained when sharpening an image correctly. The improvements can be seen on the finer elements of detail in the picture.



Sharpened Image

