## Terms:

PPI means pixels per inch. A pixel is the smallest unit of a digital graphic that can be displayed.
Resolution means PPI, or pixels per inch. A resolution of 100 means there are 100 pixels per square inch of the graphic or photo. A resolution of 200 means there are 200 pixel per square inch.


The size of a photo can be expressed in pixels, or in centimeters, or in inches. You can resize your photo in Photoshop.

When you go to Image/Image Size in Photoshop, there is a grid where you can put in the information whether you want pixels, inches, etc. The little down arrow opens a box where you can choose Percent, Pixels, Inches, etc.


The resolution you choose is always expressed as pixels per inch or pixels per centimeter.


The size that your photo prints will depend on the resolution you choose. The photo has the same number of pixels, but in a higher resolution they are more concentrated.

The higher resolution usually means a better quality photo. However, 300 resolution is usually quite sufficient for the human eye and is what is usually required for magazines. I have found that my professional digital printers can produce very good photographs at 240 dpi . as long as I use high quality photographic papers.

Here are some examples of the same photo at different dots per inch, or resolution, and what the Photoshop resizing window looks like.

Settings:



The next page with all three versions shows you the relative sizes of the picture with the different resolutions.


Printed size will be $4 \times 4$ inches Resolution is 300 dots per inch Pixels are $1200 \times 1200$


Printed size will be $6 \times 6$ inches
Resolution is 200 dots per inch
Pixels are still $1200 \times 1200$

Printed size will be $12 \times 12$ inches Resolution is 100 dots per inch Pixels are still $1200 \times 1200$

To resize your photo, first open the photo in Photoshop.


Go to Image/Image Size as shown above, and you will get this window:


Choose the size and resolution
you want.


Click OK.

Be sure now to go to File/Save As to save the new size you have made. Give it a different name (ie. Small) so you won't lose your original photo. If you are submitting online, you will need to save the file as a jpg.


## What if you want to UPSIZE your photo:

Sometimes if you want to use just part of a photo and you crop it down, it may not be large

$\times \mid$ enough for the specs you need to fill. It is possible to upsize a photo, although this can result in a loss of quality. There are several methods. If you only need to upsize a small amount, you can use the Photoshop size dialogue and choose "percent" from the dropdown arrow. By upsizing by $10 \%$ at a time, (set percentage to 110) you can usually get a nice result.

Under Filters In Photoshop there is a section called Neural Filters. Under this is a category for Super Zoom. I have not used this so I do not know how well it works.


There is also a program called Gigapixel that will upsize photos.

## Instructions for Resizing in LightRoom

Open your photo in Lightroom



Go to File/Export. This will bring up the File Export Box.


Here you can type in what folder and subfolder you want to save the image. You can give it a custom name as well. As you scroll down the export box, you can also specify the format, whether tiff, jpg, etc., the color space (usually sRGB for the web, what size in pixels, inches, or centimeters, and what resolution. You can also specify what size to limit the image to.

You must check the Resize to Fit box to make these changes. You specify the size of the long edge; the short edge will be sized automatically to keep the aspect ratio the same.

Remember, as the illustration of the different resolutions shows, once you set the number of pixels, the resolution will only determine what size your photo will print at.

## To rename a file in Windows:

Many times you are asked to give your photo a specific name. Here is how to do it in Windows:

Open Windows File Explorer and navigate to the file.


Right click and choose Rename. The file name will be highlighted. Type in whatever name you want and click outside the highlighted name. The new name will be set.

You can do the same thing in Bridge, with the same steps. Right click on the name, go to Rename, and type in the new name.

Unfortunately, I do not use a Mac, so I do not know the steps for renaming photos in Apple products.

If you have questions about these instructions, I am available by phone at 7703964884 to answer questions.

