

Resizing Images for Projection

- Images must be resized (usually made smaller) for display on a digital projector
- Learning to resize “manually” puts you in control
- Being in control means no surprises when you see your image on the screen
- The “bottom line”...

the dimensions of your image should “match” the dimensions of the projector in one direction and be smaller than (or the same as) the dimensions of the projector in the other direction

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The Biggest Mistake in Resizing...

using you favorite program’s “email this image” feature to submit images for display!

This results in a file that is too small to display adequately when projected on a large screen.

Don’t do it... your images deserve better!

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A Few of Definitions

- Pixel – short for “picture element”
the “small dots” that actually make up an image
- Aspect Ratio – the ratio of the width of an image to its height.
- Resolution – usually measured in “dots per inch” or “points per inch” ... they mean the same thing

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Projector “Resolution” and Aspect Ratios

Name	Size (in pixels)*	Aspect Ratio
SVGA	800 x 600	1.33
XGA	1024 x 768†	1.33
WXGA	1280 x 768	1.67
SXGA	1280 x 1024	1.25

* width x height

† Most common as of 2009... this will change as the march of technology continues!

See: http://en.wikipedia.org/wiki/Display_resolution for a good and complete discussion of display “resolution”.

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The Problem

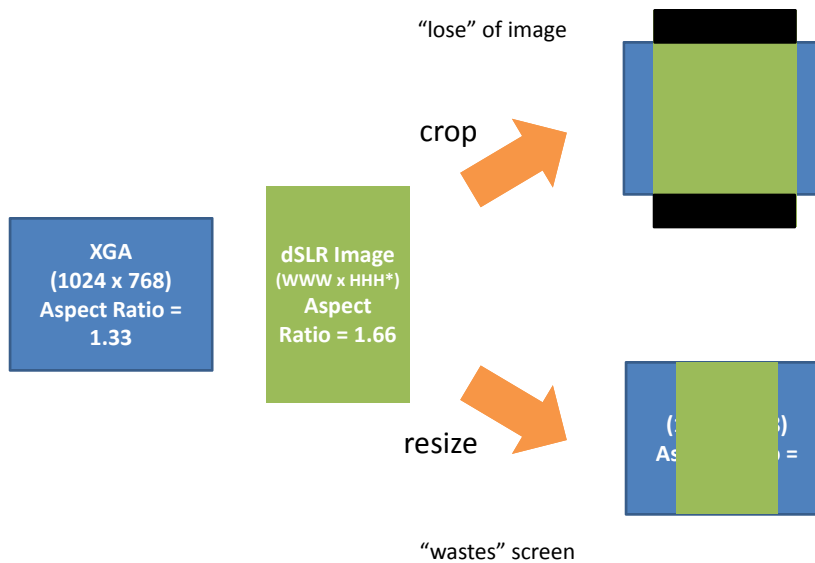
- The native aspect ratio of a digital image is most commonly 1.66 (dSLR) or 1.25 (point-and-shoot)*
- Neither of these matches the common XGA monitor



* The actual height and width in pixels will depend on the size of your camera's sensor... the more megapixels the larger the image. The XGA screen is less than one megapixel in size so current images are always larger than the screen.

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Two Possible Solutions



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What Happens if You Don't Resize

- It depends on the “system” being used to display the image
- Most commonly ...
 - ‘The system’ changes the aspect ratio of the image to “fit” the projector
 - This results in “squashed” or “stretched” images... you’ve seen them!!!



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The Solution...

resize your image without changing the aspect ratio

Set one dimension of your image to fit the projector and let the other “float”

Using an XGA projector (1024 x 768) as an example:

For a landscape format image:

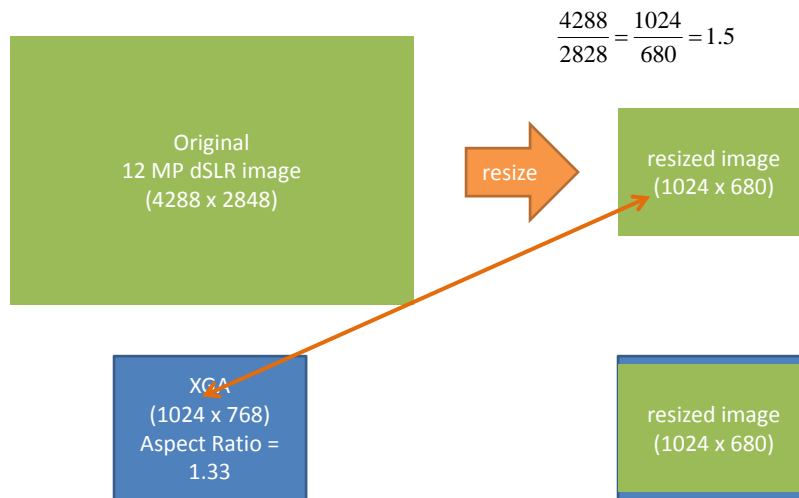
Set the width to 1024 pixels and let the height “float”

For a portrait format image:

Set the height to 768 pixels and let the width “float”

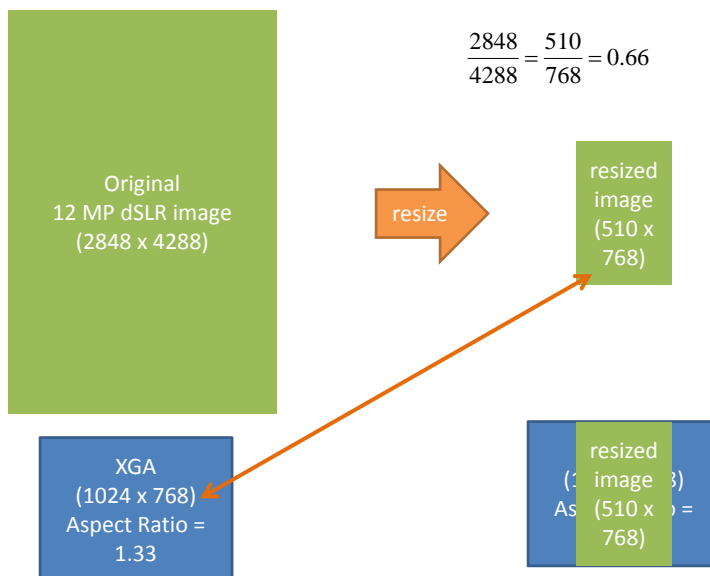
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For a Landscape Format Image...



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For a Portrait Format Image...



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DPI Does Not Matter...

Note that in this discussion the resolution of the image never entered the picture... pun intended!

Resolution is not important when we are talking about a projected image (or an image shown on a monitor).

Resolution is only important when dealing with prints. (Then it is critical!)

If you are told to set the resolution for a projected image to a specific value ... don't bother arguing... go ahead and follow the instructions... it has no bearing on the projected image

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Enough Theory...

The exact steps for preparing an image for projection depend, of course, on your choice of image editing program.

I will provide a quick walk through for Picasa 3.0 and Adobe Photoshop Element 6.0.

These are programs that beginners are likely to use and that I have copies of available; that is why I have chosen them.

If you use a different photo editing program, hopefully the "theory" given above will be enough to get you going!

Please note that I do not use either of these programs on a regular basis and thus I am not really a very good source of help in using them for photo editing.

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Preliminaries for Both Programs...

Always begin by finding out the resolution of the projector you will be using; we'll assume an XGA projector (at 1024 x 768 pixels) here.

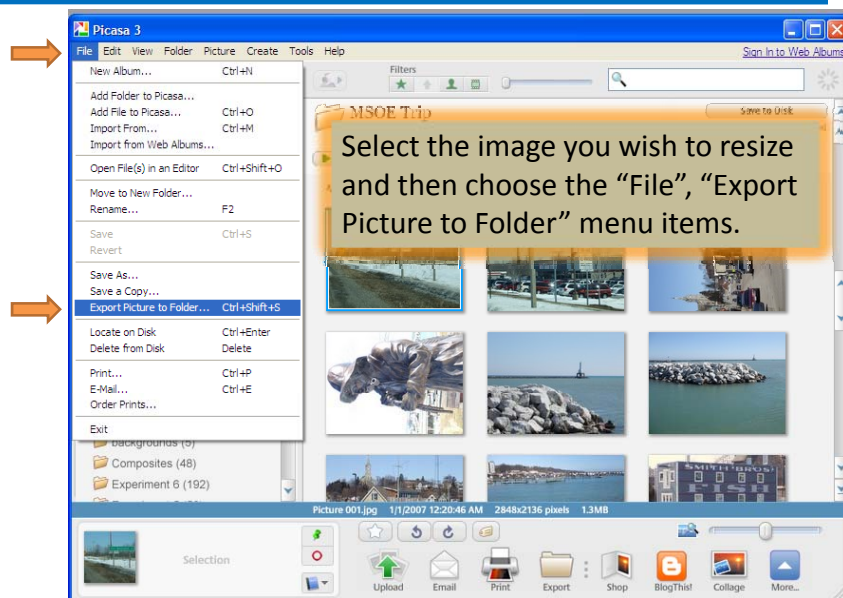
Also, remember to *never* work on an original file; resizing is a destructive process and can not be undone.

Most images, after they are resized, can be improved by applying a bit of "sharpening". Instructions for doing this are also included.

Resizing and sharpening should be done after all other editing steps have been completed.

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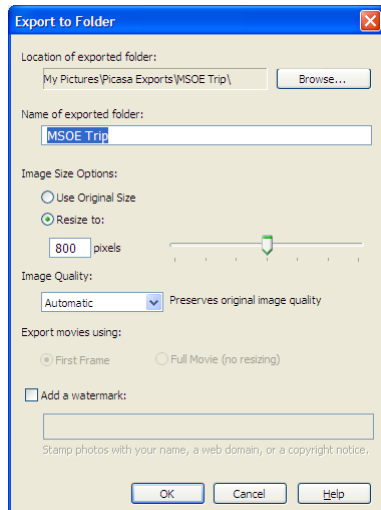
Picasa 3.0 (Resizing 1 of 2)



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Picasa 3.0 (Resizing 2 of 2)

In the resulting dialog box, do the following :



1) Choose a folder for the resized image.

2) Make sure the "Resize to" option is chosen.

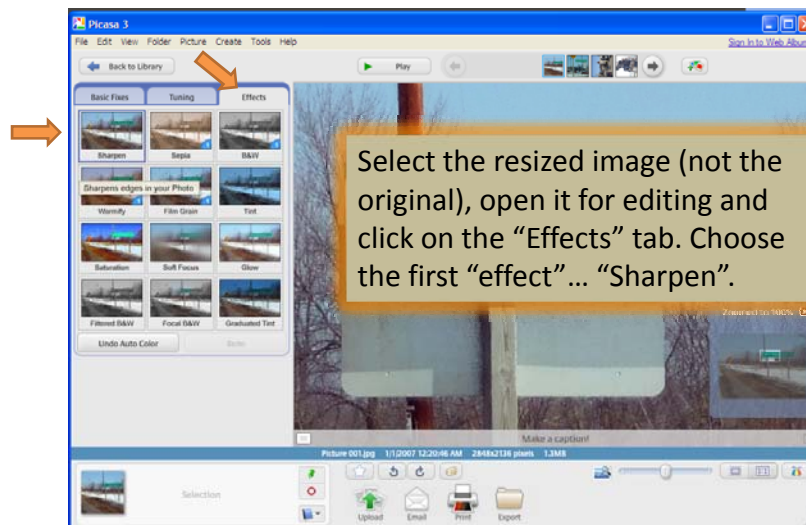
and

Set the "pixel" value to 1024 for a landscape format image or to 768 for a portrait format image.

3) Click "OK" and you are done.

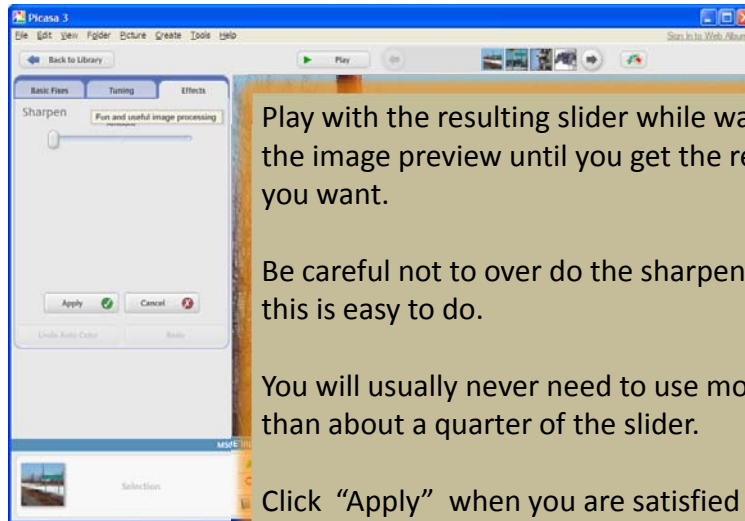
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Picasa 3.0 (Sharpening 1 of 2)



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Picasa 3.0 (Sharpening 2 of 2)



Play with the resulting slider while watching the image preview until you get the result you want.

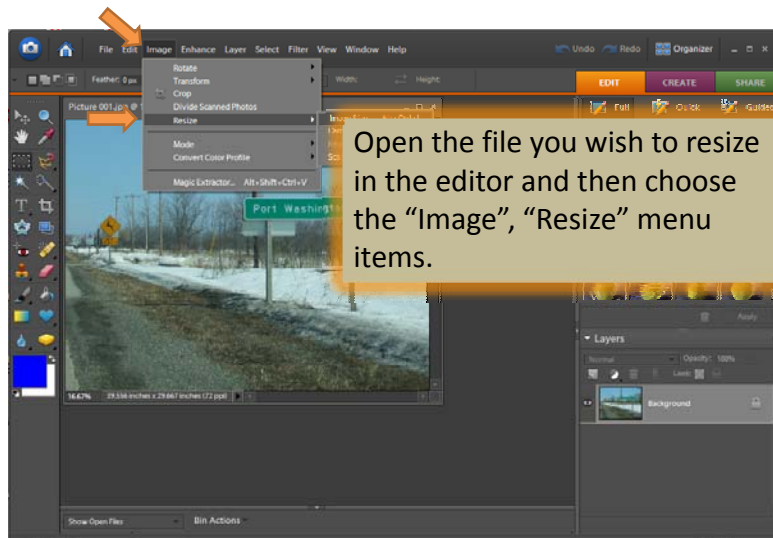
Be careful not to over do the sharpening... this is easy to do.

You will usually never need to use more than about a quarter of the slider.

Click "Apply" when you are satisfied and remember to save the file.

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Photoshop Elements 6.0 (Resizing 1 of 2)

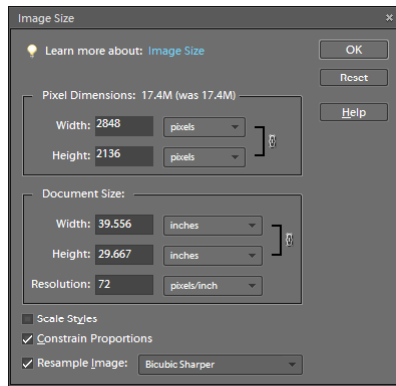


Open the file you wish to resize in the editor and then choose the "Image", "Resize" menu items.

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Photoshop Elements 6.0 (Resizing 2 of 2)

In the resulting dialog box, choose the following options:



3) Click "OK". Remember to save the file.

2) Set the "width" value to 1024 for a landscape format image or the height value to 768 for a portrait format image.

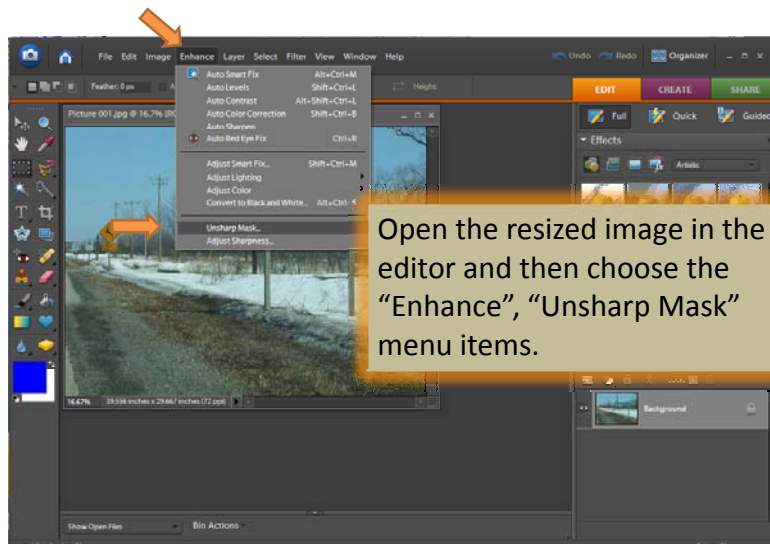
Note: the value you do not set will adjust automatically.

1) Begin by making sure that both the "Constrain Proportions" and the "Resample Image" options are checked.

Choose the "Bicubic Sharper" option for "Resample Image"

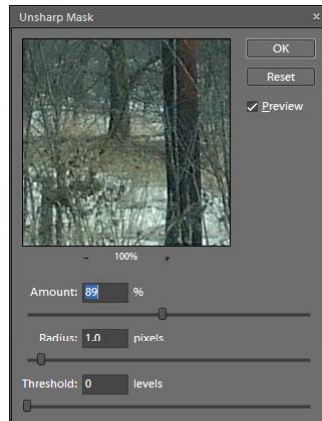
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Photoshop Elements 6.0 (Sharpening 1 of 2)



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Photoshop Elements 6.0 (Sharpening 2 of 2)



Play with the sliders in this dialog box while watching the image preview until you get the result you want.

Be careful not to over do the sharpening... this is easy to do.

“Amounts” between 75 and 150% are common. Values for the radius are usually in the 0.7 – 1.2 pixel range. I usually leave the threshold set to zero.

Click “OK” when you are satisfied and remember to save the file.