

## Using graphics on the web

### Keep graphics small

Most users have little patience for slow loading pages, and will rapidly abandon a slow site. Remember that many of your audience will be using a dial up modem, and try to keep graphics file sizes under 40K. Be willing to sacrifice some image quality.

### Provide thumbnails for large graphics

If you feel your site absolutely requires large graphics, to illustrate an experimental set-up for example, provide an in-line reduced thumbnail of the graphic on your main page, which will link to the larger graphic and a separate page. This way the user has a choice and can decide if she or he wants to view it then, at another time or at all. It's also a kindness to indicate the file size, so the user can estimate how long the display will take to load.

### Use the same motifs throughout your site

Recycle graphics (icons, navigation bars), as they are cached locally once downloaded. Standardizing on a set of graphic arrows, bullets, logos etc. also provides your site with a characteristic "look and feel" that your audience can identify with.

### Provide alternative text for non-graphics browsers

Use the [alt="" ] command to provide a text description for those with text-only browsers or those who may have graphics loading disabled on their browsers. This also follows guidelines for Americans with Disabilities Act (ADA) Compliance.

### Use the appropriate file format

**Graphics Interchange format - GIF** - was originally developed for the rapid transfer of images. GIF compression works by encoding the identical repeating elements within any given graphic, storing the code in an attached table and using the data to display the image when called upon by the web browser. GIF compression does not alter the data of the image, but does not give the tonal quality of JPEG, either. It gives the best compression on images with many repeating elements, such as line-art images, screen shots, logos, cartoons & drawings with that are only 8 bit - or 256 colors. GIF images can be quite small and still look good, so it pays to experiment. There are two GIF variations that are enormously important to web development: transparent GIFS and animated GIFS .

**Joint Photographic Experts Group- JPEG** - compression should be used for continuous tone images such as color photographs or images with complex color that will show a "banding" when saved as GIF. JPEG is a "lossy" compression which means it drops data from the image to achieve optimal compression. The degree of compression, and therefore the degree of image loss, can be specified when you first save the image. Continuous tone images can often be compressed smaller than GIF images and look better as JPEG. It's important to remember that JPEG images will degrade each time they're edited and saved, so keep your original in another format for future editing. Once you save as JPEG, the lost data cannot be replaced.

### Image resolution should be 72 dpi

Having the image resolution higher than 72 dpi (dots per inch) will cause unnecessarily large file size, as most monitors will not be able to display a higher resolution than this.

**Use only "web safe" colors**

Both Macs and PCs generally have a palette of 256 colors for displaying images. The trouble is only 216 of them are common to both platforms. To insure that PC and Mac users are seeing the same hues, choose from this common 216 color palette.

<http://www.usi.edu/webservices/colors.asp>

**Sizing**

Avoid the temptation to resize a graphic by changing the width and height values within the IMG tag. Doing so will often greatly distort the image. If the image's physical size needs to be changed, use the cropping functions of your favorite graphics editor.

**White Space**

HSPACE and VSPACE attribute in the IMG tag. Sets a pixel width around the image to allow space between text and the image.