



Web Graphics Glossary

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A sample of the training materials available from Almost Everything Communications

Graphics Glossary

Acrobat (.pdf): A file format designed by Adobe to exchange documents between computers and platforms while preserving their appearance and layout. Often used for posting preexisting documents on the Internet. Also useful for transporting documents to be printed. With proper software, Acrobat documents can be created with internal and external links, multimedia elements, and forms.

alpha channel: Information embedded within a graphic file containing masking or transparency information. Software that supports alpha channels can use that information to alter the display of the image, masking off parts of it or displaying parts with gradations of transparency. Ultimately, the PNG file format will support alpha channels, but full support is not yet available without using a plug-in.

antialias: The technique used to smooth low-contrast raster graphics by placing dots of an intermediate color between the border of two contrasting color areas.

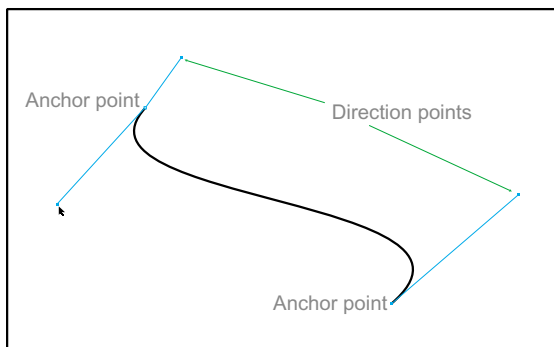


antialiased (left) and aliased text

artifact: A consequence of lossy compression. JPG compression, for instance, offers increasing artifacting as one further compresses the file. See the image under “loss-less, lossy.”

background color: In painting software, this is the color that will appear if you delete a selection. It is also the color that fills the image window at the start.

bezier curves: Used to draw smooth curves in vector or raster graphics programs. Allows one to adjust the curve of a line by changing the angle and length of control arms attached to anchor points on the line. Common in drawing programs, Photoshop also uses Bezier Curves for its Paths.



Change a Bezier curve by moving its direction points

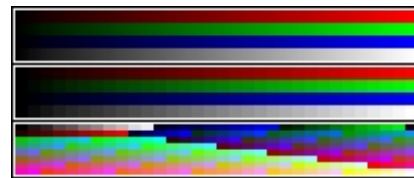
bitmap graphic: Another name for the raster graphics that treat an image as a large grid of dots. Best for photographs

and on-screen graphics (especially Web graphics). Bitmapped graphics do not scale too well. Bitmap is also used to refer to images made up of only black and white dots.

cloning: In painting software, cloning is taking one part of an image and dynamically painting it onto another part of the image. This is useful for fixing damaged photos or graphics, as well as altering photographs in devious ways. Also known as the Rubber Stamp tool in Photoshop.

CLUT: Color Look Up Table. This refers to the index of colors stored in an indexed-color format (such as GIF).

color depth (bit depth): The number of colors a computer can display, or that an image can contain, is determined by the number of bits dedicated to each point or element of the image. 8-bits allows up to 256 different colors in an image. 16-bits allows thousands of colors and 24-bits allows millions of colors.



The spectrums of 24, 16 and 8 bit color.

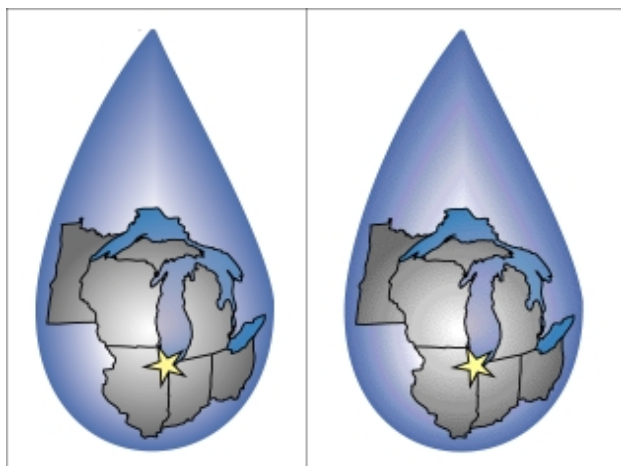
color space (gamut): The range of color that can be captured by a given manner of definition. The two most popular color-definition standards are RGB and CMYK. RGB is what computer monitors use, and CMYK is what color printers use. RGB captures a larger range of the human visible spectrum than CMYK. Hue, Saturation and Lightness (or Brightness, HSL or HSB—also known as LAB) is another common manner of color definition.

compression: Techniques or algorithms used to reduce file sizes of graphic and text files. Lossy compression sacrifices image quality for a smaller file, while loss-less compression does its magic without loss of detail.

CMYK: The color space defined by the primary subtractive colors, Cyan, Magenta and Yellow plus Black used in four-color printing. Images to be printed should be produced in the CMYK color space.

dither: Reproducing a color that is not in a given palette by mixing dots of different colors in a pattern or randomly. This is used in graphics software when reducing a 16- or 24-bit color image to an indexed color (8-bit or lower) image, or by Operating System or Browser software when displaying an image that uses more or different colors than the software or machine supports. In general, Diffusion dither is better than

Patterned dither.



Dithering of an image to the 216-color Web Safe Palette

drawing: In general, creating or manipulating vector graphics. Opposed to Painting.

drop shadow: The ubiquitous graphic technique of making an image appear to be floating above the screen or page (or to give the image a sense of depth) by placing a graphic shadow behind the image. Drop shadow filters are common in graphics software, but the effect can also be easily simulated by placing a gray, slightly blurred border around two connected sides of an image.

EPS: “Encapsulated Postscript” most universal file format for vector graphics. Useful for transferring vector graphic images between software, but will often leave the transferred image un-editable.

feather: The technique of softening the edge of an image (or part of an image) by making it fade gradually to transparent. Feathering is often an attribute of a selection tool in painting programs, and can be applied to any selection.

file size: Distinct from image size, the file size is the amount of memory required to represent an image in storage or transmission. A graphic can be quite large while having a small file size, and vice versa, depending on type of image, the format in which it is saved, and any compression techniques being used.

filter: In Photoshop, filters apply particular effects, such as embossing, or a drop shadow, to an image or part of an image.

foreground color: The color that will be used to draw a new line or shape. Change the foreground color by selecting the eyedropper tool and selecting a color.



The color control box in Photoshop. The selected background color is blue, while tan is the foreground color. Swap the colors by clicking the arrows, and set a black foreground and white background by clicking the black and white squares.

GIF (.gif): “Graphic Interchange Format” invented in the 80’s. GIF is a Loss-less compression format that works only with 8-bit or less images (256 colors or less), and works best with graphic images with large swaths of color (like graphic logos). GIF works by reading horizontally through the image, compressing patches of a single color or repeating pattern. GIF also offers transparency and animation features. One of the two Internet standard formats.

HSL: Hue, Saturation and Lightness is a method for defining the color space of an image. HSL is most often used for changing the color and contrast of an image. PhotoShop offers this adjustment through the “Adjust Color” command.

image size: Distinct from file size, the image size is the amount of space on the monitor or page that an image covers.

indexed color: In an indexed color file format, a table is constructed recording the values of all the colors used in an image. The colors are then applied by noting the table address of the color rather than the full color value. This works to reduce file sizes, but is only practical for small numbers of colors, such as 256 (8 bit) color or below. GIF is the most common indexed color format. The color value table attached to an image is its “CLUT.”

JFIF (.jif): A precursor to JPEG, and basically interchangeable with it.

JPEG (.jpg): “Joint Photographics Expert Group” graphic file format. JPEG is a Lossy compression format that is excellent for storing photographic images. It offers control over level of compression and image quality. One of the two standard formats for web graphics.

kerning: In print, the amount of space appearing between individual characters. Different shapes of letters need different amounts of spacing to look balanced. Well set type has kerning adjusted for aesthetics and ease of reading.

layer (PhotoShop): In PhotoShop, and other graphics software, an image can be composed of many different layers, each with a different element. The layers can be moved and

adjusted independently of each other, and can be turned on and off as needs be. An image saved in any format other than PhotoShop standard will have all the visible layers compressed to one, discarding the others.

leading: Pronounced “leding,” this is the amount of space appearing between lines of text. This refers to hand-laid printing where line spacing was determined by strips of lead separating the lines of type. Leading can be adjusted for text in most graphics programs, and some leading control can be simulated by adjusting the attribute of blank lines in an HTML document.

loss-less, lossy: Used to describe compression formats, these terms describe the degree to which the quality of an image is preserved in compression. Loss-less compression preserves the image precisely as the original while compressing the file. Lossy compression distorts the image determined by the amount of compression achieved. Lossy compression schemes usually offer control over the amount of compression, and thus provide control over the file size and image quality.



Lossy JPEG Compression creates “artifacts” (right)

magic wand: The tool used in painting programs to select areas of contiguous colors. By adjusting the range of color selected by the tool, one can select just about anything.

marquee: In painting software, the “running lights” outline marking an area or areas that are selected. A general term for the rectangular, and circular selection tools. Also called the “marching ants.”

opacity: Also called “transparency,” opacity refers to visibility settings within a graphic document. For instance, if the opacity of a Photoshop layer is set to 20%, it will appear as a ghostly image on top of the layers that appear beneath it. Opacity information for a document can be stored in an alpha channel.

painting: In general, creating or using bitmap graphics. Opposed to Drawing.

palette (artistic): The set of colors one chooses to use in the creation of images or a set of images. The palette one uses strongly influences the impression of the image on the viewer, and using the same palette for a number of images provides unity between the images.

palette (platform): The selection of distinct colors a system or program can use to display graphics. Windows desktop icons use 16 different colors. The Web-safe palette uses the 216 colors that Internet Explorer and Netscape Navigator share. Graphics programs only use palettes when working with less than thousands of colors (8 bit color or less).

path: In PhotoShop, a path is created by the pen tool or converted from a selection. Paths can be saved, moved or changed via Bezier Curves. They can also be stroked or filled according to the color, tool and brush definition active at the time.

pattern: An image or texture that is applied to an area as a repeating tile. Background textures on web pages are an example of patterns. To apply a pattern in Photoshop, first select an entire image or part of an image to become the pattern, and then select Edit--Define Pattern. The pattern can then be applied to any selection by choosing the Fill command and choosing “Pattern” in the “Use:” box.

Pencil: Similar to the Brush, the pencil tool draws lines or dots that have sharp, un-graduated edges. The pencil is best for making pixel-by-pixel adjustments, and drawing or stroking hard graphic lines and shapes.

pixel: A point on a computer screen. A monitor's display is made up of a finite set of *physical* pixels. A single pixel is the smallest point a monitor can display. The image the screen displays, however, is made up of a variable number of *logical* pixels. Changing the display resolution of a monitor alters this mapping, putting together physical pixels to make logical pixels. When the number of logical and physical pixels match up, this is called the *natural* resolution of the monitor (see “screen resolution”). A computer screen or browser window can be thought of as a grid of logical pixels with the 0,0 point being the top, left corner of the screen or window.

Postscript: A vector-graphics standard invented by Adobe for high quality text and image printing and scaling.

progressive: A feature of GIF, JPG and PNG file formats. An image saved with the progressive feature appears to come into focus on a web browser, as several passes over the image each increase the detail. The idea was to allow those on slow connections to get an idea of what an image looked like without having to wait for the whole thing to be downloaded. However, with increasing connection speeds, it is now often used simply for effect.

raster: A graphic composed of individual colored dots. Ideal for photographs. Compare to “vector.” Raster formats include BMP, GIF, JPEG and TIFF. Rasterizing is converting a vector graphics image to a raster graphics format. In general, Photoshop does a better job of this than PaintShop Pro.

resolution: Measured in Dots Per Inch (dpi), the resolution determines the smoothness (and sometimes size) of an image. In general, resolutions for print are much higher than those for screen graphics. Standard screen resolution is 96 dpi (Windows) or 72 dpi (Mac), while standard printer output begins at 300 dpi and goes up.

RGB: Red Green Blue defines the color space reproduced on computer monitors. RGB color is defined by specifying levels for the three primary additive colors. Graphics for on-screen viewing should be produced under RGB. RGB is also used for defining colors in HTML.

scaling: Changing the size of an image, or object. Measured in pixels for screen display, or inches for vector graphics and print media. Scaling is also often done by percentage. Closely aligned with resolution—changing the resolution of an image is often the same as scaling. When scaling bitmap images, text is hard to preserve. Photoshop offers three different interpolation methods for scaling. In general, use Natural Neighbor when scaling *up* a screen shot or graphic, and use Bicubic for photos. Bicubic is best for scaling down all images, though don't be afraid to experiment.

screen resolution: Different from image resolution, the screen resolution is the number of dots per inch a computer monitor can, and is set, to reproduce. The numbers are for logical as opposed to logical pixels. Standard resolutions include 640 X 480, 800 X 600, and 1024 X 768. At 1024 X 768, a 19" monitor is closest to the 72 dpi that represents a one-to-one match with the printed page. At higher resolutions, images appear smaller and smoother. At lower resolutions, images appear larger, but blockier. Graphic and Web designers need to keep in mind the likely resolution at which an image or page will be viewed—a page designed for an 800 X 600 screen may not work well or at all when viewed from a monitor set to a lower resolution. Older monitors and machines do not offer resolution switching.

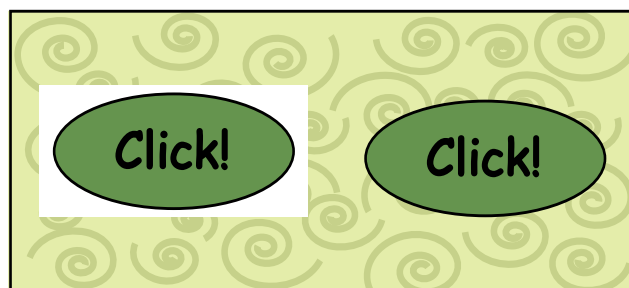
selection: In general, graphics software allows one to work on only a single element at a time. Apart from simply making graphics work manageable, this allows one to apply differing effects or tools to different elements of a single image. In painting software, selections are usually indicated by a marquee outline (the marching ants), and can be created using the simple marquee tools, or sophisticated tools that select for a range of colors or transparency. In drawing software, the selected object is indicated with a box around the object and handle points of the box to manipulate the object. If a selection is active on an image, filters, tools or effects are applied only to the selected area or object. For many tasks you will need to perform, the most important step is figuring out how to select what you need to work on, and not select what you want to leave alone. Control-D is a

pseudo standard key command for *de-selecting* everything on the image

stroke: In PhotoShop, stroking a path or selection places a line of a given color, width, and type along the path or selection.

TIFF (.tif): “Tagged Image File Format” one of the most popular formats for storing raster images. TIFF offers both high quality and some level of compression. We generally use TIFF for high quality photo images and scans. This is not a format that a web browser can read.

transparency: The GIF format allows for one color to be defined as transparent, which means it will not be displayed when the image is viewed so that an image or background placed behind the image will show through. This is particularly useful for making additive data layers on a map, so that displaying each successive layer does not hide those beneath. A very useful device, this is accomplished through PhotoShop by setting an image's color depth to “indexed color” and then using the GIF Export command under the file menu and specifying the color to be made transparent in the dialogue.



The same file was saved as a GIF, first without a transparent color, and then with white as transparent.

vector graphic: A graphic type that defines an image as a set of equations defining the lines, curve and fills of the objects making it up. Best for print graphics, especially those that will be printed at a high resolution or need to be used at a variety of scales. EPS is the standard format for vector graphics (though each drawing program will have its own format). WMF is primarily a vector format.

watermark: The common web and graphic technique of displaying a faint image as a background to a web page or text. A watermark can be created in Photoshop by adjusting the Saturation and Lightness controls for an image.

WMF: “Windows Metafile” a graphic file format popular on Windows machines (especially with Microsoft software). Useful for transferring files between programs on the Windows platform, especially those that have a hard time with EPS files.