

aliasing An attribute of computer-generated images that causes jagged, stair-stepped edges in graphics. Also known as *jaggies*.

anti-aliasing A software process used to eliminate visually hard, jagged edges by smoothing.

aspect ratio The relationship between the width and height of your document, expressed in pixels. *For example:* 800 x 600 pixels.

compositing The process of pasting or layering one image or movie over another.

dpi Dots per inch. A measurement of output device resolution, such as inkjet printer.

downsampling Resampling an image file downwards by the removal of pixels or sound samples. *For example:* scanning a photo at 150 ppi, and then downsampling the resolution to 72 ppi to create a web page graphic.

grayscale A continuous tone image comprised of black, white, and gray data only. An example would be a traditional b/w photograph.

halftone A simulation of continuous tones by the use of black or overlapping process color dots of varying size or position. An example would be a printed picture in a newspaper or magazine.

pixel Picture element. Digital images are composed of touching pixels, each having a specific color or tone. The eye merges differently colored pixels into continuous tones.

ppi Pixels per inch. Units of measurement for scanners, monitors, or cameras to describe input and output resolution.

rasterize Process of converting digital information into a grid of dots. A vector graphic needs to be rasterized before it can be printed or displayed. Also, the process of changing a vector graphic into pixels.

resampling If an image needs to be changed in dimension and it is not possible to rescan it, pixels must be added or removed. This process is called resampling.

vector graphic Drawing method whereby lines and curves of the artwork or text are defined by mathematical formulas. A vector graphic is resolution independent (not a bitmap; not made of pixels), and can be used at any size. Also known as a **Bézier curve**, named after Pierre Bézier.

alpha channel An image mask (also known as a transparency channel), where white areas define opaque color pixels, and black areas define transparent pixels. Gray levels define partial transparency—from 0 to 255—or a possible 256 shades of transparency.

A/D converter Analog-to-Digital converter. A scanner would be a good example; an analog image on paper becomes digitized. Another example would be a digital camera; the real world is stored as a digital image.

constrain To restrict movement of an object or layer in one desired direction (i.e. up/down, left/right, 45 degree, rotation, etc.) usually done by holding a keyboard command (often the shift key) while dragging with the mouse.

global/local General terms used to describe how much of a file is being selected or altered; total/partial selection or alteration.

lossless Any compression method (codec) that ensures that all the information in the original file is preserved after compression. Saving a file repeatedly with lossless compression will not affect the image quality. Photoshop's native file format (.PSD) is uncompressed.

lossy Any compression method (codec) that discards some of the original data during compression. Depending on the amount of compression applied, lossy files can range in quality from excellent to severely degraded.

marquee selection Marquee refers to a tool, in many applications, which will create a selection area; it can also be used to refer to the selection.

FILE FORMATS FOR DIGITAL IMAGES:

PSD (.psd) Photoshop Document. Adobe Photoshop's native file format, containing all layers and channels. Uncompressed.

JPEG (.jpg) Joint Photographic Experts Group. Compressed file format, commonly used for photographic images, printed or online. Contains one layer only, with no layers or alpha channels. (can contain drawn vector paths, though).

TIFF (.tif) Tagged Image File Format. A popular image file format supported by the majority of image-editing programs, running on a variety of computer platforms. Uncompressed.

artifact Distortion or anomaly in audio or visual information. Examples would include a “noisy” scan of a photograph, a random pixel of the wrong color in a 3D rendering, or a “pop” or “tick” in a soundtrack. Artifacts are commonly seen or heard in files that have been compressed. See also NOISE

banding Visible tonal steps in an image. See POSTERIZE

bit depth Also called *pixel depth* or *color depth*—The number of bits used to represent each pixel in an image, determining its color or tonal range. Greater bit depth (more bits of information per pixel) means more available colors and more accurate color representation in a digital image.

24-bit color Color depth in which each pixel has a bit depth of 24, or 224, for a possibility of more than 16 million colors

chrominance The color information in a video signal. See also LUMINANCE

dithering mixing or displaying pixels of available colors to simulate colors not available

gamma The tonal range of lights and darks in an image. Gamma can be adjusted using *Levels* or *Curves* to brighten or darken the tonal range

gamut The range of colors that a color system can display or print. The spectrum of colors seen by the human eye is wider than the gamut available in any color model. Examples of color models would include RGB, CMYK, and NTSC

GIF Graphics Interchange Format. Bit-mapped graphics file format which supports images of up to 256 colors (8-bit). The GIF format is widely used online and works best with illustrations with areas of flat color. (JPEG is a better option for photographic images.)

histogram A chart displaying the tonal ranges present in an image as a series of vertical bars

HLS color Hue, Lightness, and Saturation. Way of describing or adjusting color qualities

hue The color of an object as perceived by the eye.

luminance The brightness information in a video signal. See also CHROMINANCE

monochrome An image or movie in a single color or in various shades of the same color. Examples would include: a B/W movie, a grayscale photo, text from a laser printer, or a single color halftone.

noise Visual quality of an image that appears “grainy”. Can be caused by photographing in low light conditions, or can be added to an image using the *Add Noise* filter in Photoshop. Can also appear as bright stray pixels in a digital photo. See also ARTIFACT.

posterize The conversion of a continuous tone image into a series of visible tonal steps or banding

RGB color The computer monitor generates primary colors of light by bombarding the phosphor coating of the screen with electrons. The mix of red, green, and blue light that results is perceived by the eye as color. When all three colors are ON at full intensity, the result is white light; when all three colors are OFF, black results.

tone curve Also known as gamma curves. These are used to smoothly adjust the overall tonal range of an image, or the individual tonal ranges of each color channel.