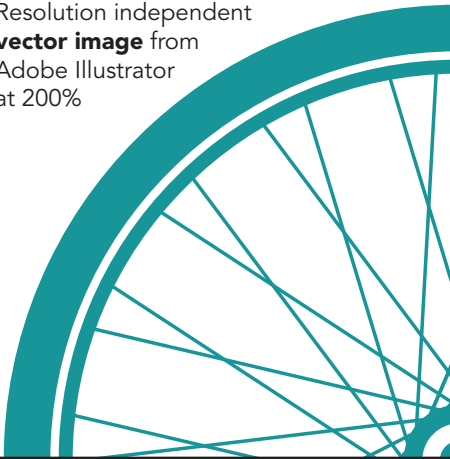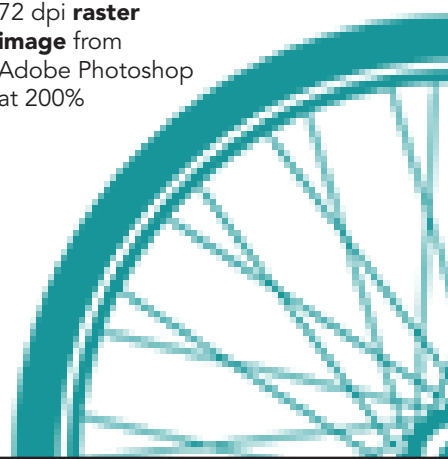.PSD   .JPG   .GIF   .TIF   .PNG   .EPS   .AI

Demystifying
Graphic File Formats

Resolution independent **vector image** from Adobe Illustrator at 200%

72 dpi **raster image** from Adobe Photoshop at 200%

Vector vs. Raster

Graphic images fall into two main categories: *Vector* and *Raster* (bitmap)

Vector Images—Drawing programs like Adobe Illustrator create vector graphics, named because they are made of lines and curves defined by mathematical characteristics called vectors. The drawing of the wheel on the left uses mathematical formulas to draw the circle and spokes. Vector graphics are resolution independent and, therefore, can be sized up and down without losing detail or clarity. The mathematical equation simply adjusts for the size change, and Vector images can be placed at any size.

Vector graphics are the best choice for images with typefaces in them and graphics with flat areas of color that need to retain a crisp edge when scaled at various sizes...like logos.

Vector files are usually saved as an Illustrator file (filename.ai) or eps (filename.eps)

Raster Images—Photo and image editing programs like Adobe Photoshop generate raster images. Raster images use a grid of small squares known as pixels to represent the image. The wheel illustration was imported into Photoshop and "rasterized" so now the image is translated into a pattern of pixels. Raster images are resolution dependent—which means that they contain a fixed number of pixels to make up the image and therefore an image can lose some of it's detail when enlarged (an image may look "pixilated" or "fuzzy" if it is placed higher than 100%) Raster images should be placed no larger than 100%.

Raster images are the best choice when representing subtle gradations of shades and color...like those needed for photographs.

Some of the most commonly used file formats:

- **AI -** (Adobe Illustrator). This is the original 'native file' for illustrated logos and graphics. This is a *vector* format. It retains all layer and font information so the image can be edited. **V**

- **PSD -** (Adobe Photoshop). This is the original 'native file' for photographic images. This is a *raster* format. It retains all layer and font information and can be edited. **R**

- **EPS -** Like AI and PSD files, you need a program like Illustrator or Photoshop to view an EPS. This format is often used in page layout for print. They are usually *vector* files like logos and illustrations...but can also be *raster*. If you don't have your logo in an AI format, an EPS format will often work too. **V** **R**

- **GIF -** A compressed format used for the web that is not suitable for printing. GIFs are good for flat areas of colors and fonts, like logos. They retain up to 256 colors, but for images that have more than 256 colors (like photos), some of the image will be 'reinterpreted'. **R**

- **PNG -** Starting to replace GIFs. Also not suitable for printing. **R**

- **TIF -** Maintain high image quality with little compression. Used for print. **R**

- **JPG -** Used for the web (low-resolution) and print (high resolution). Best option for photographs and similar continuous tone images that contain many colors. JPGs maintain high image quality if saved at high resolution. **R**

V Vector format   **R** Raster format