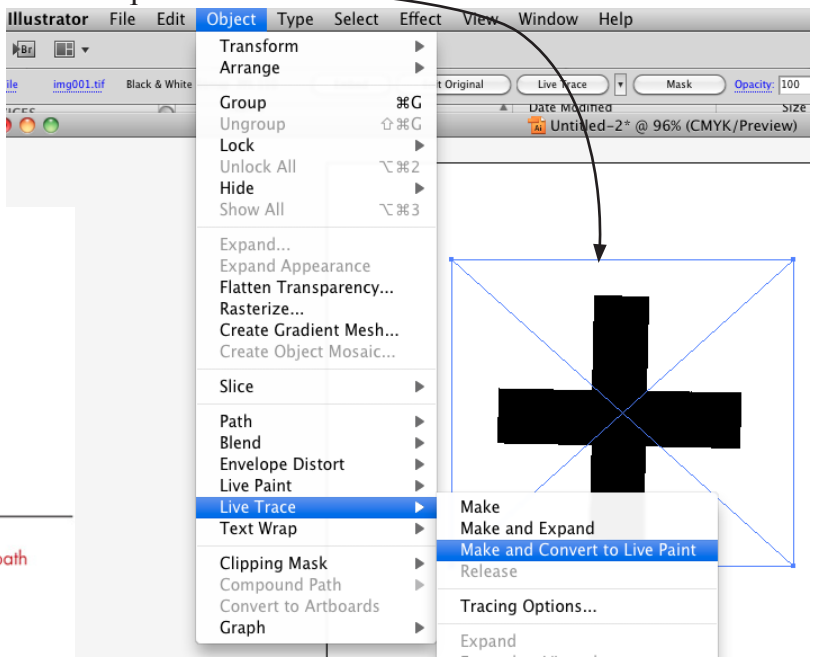
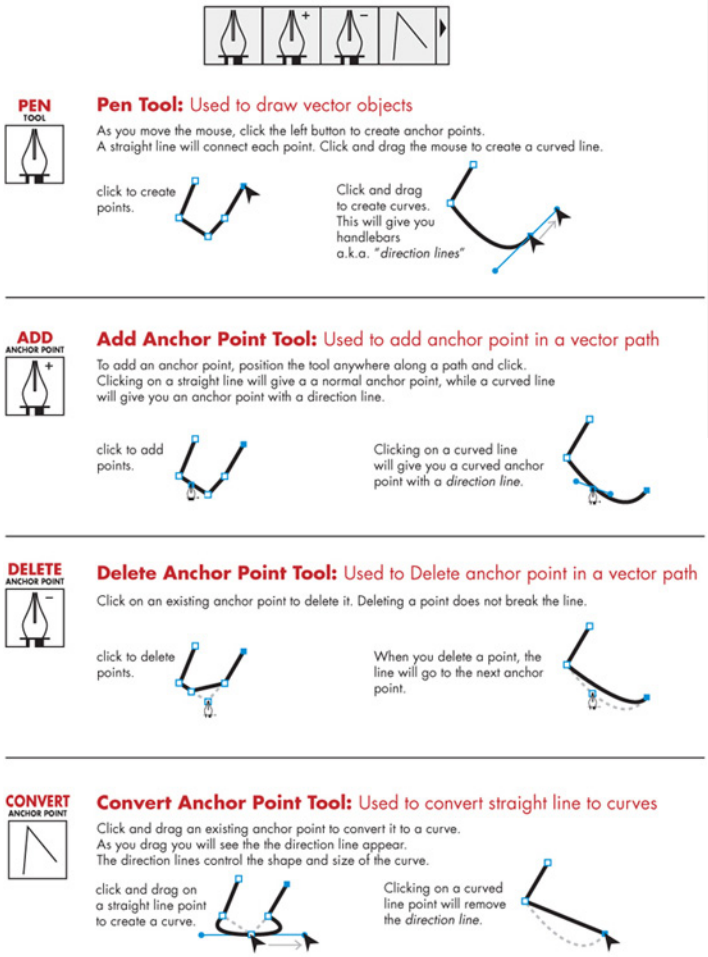
Vectors and vectorizing graphics

Vectoral image formats permit infinite scaling of graphics. How? The contours are described rather than the individual pixels. You can make a circle 1 inch wide or 1 mile wide, it's still the same shape. Curves for fonts or blobs can be described mathematically, too. When making these graphics, we can use a rect tool or a circle tool. Or we can use a 'pen' tool that makes shapes with N verteces. We are then able to manipulate control points around these verteces (if we wish to) in order to smooth the corner into a curve.

Another way of getting vectoral data is to convert from a raster (pixel based) image. We may find such graphics on the Web, or scan it, or even produce it using Processing. But in all cases, we will need to import the graphic into Illustrator to perform the vectorization. We can do this by dragging and dropping the .PNG, .TIFF, or .GIF image onto the open Illustrator document from the Desktop. Note that .JPEG, which is common, is not in that list. That's because JPEG files have unwanted compression distortion that will just cause unwanted noise in our document. It's better to avoid JPEG whenever possible if we are trying to vectorize.

Once the raster graphic is visible in the document window in Illustrator, you will highlight the graphic and go to the menu named 'Object -> Live Trace' and choose the Make and Convert to Live Paint item. The next thing to do is to use the white arrow tool to select and remove the square frame Drag from an area near one of the four corners over top of the corner, then release the mouse. Now the square border is selected. Then hit the delete key twice. This is helpful to reduce the unneeded framing of the object.





Once you have done this you will be able to use the pen tools to manipulate the curves. These are described to the left.

When preparing graphics for vectorization, you will want to avoid shades of gray or color in most cases. It is possible to vectorize colors and shades, but the effect tends to be harder to control than working with black and white. You will generally want to use graphics that has a resolution near 150 dpi (dots per inch). This can be configured into your scanner software when you are scanning.