

6 Using Adobe illustrator: advanced

This document was prepared by Luke Easterbrook 2011.

1 Summary

This document covers the use of the Adobe Creative Suite for Scientific Illustration. The adobe creative suite consists of several useful applications (licence level dependent). For our purposes we will be focusing on: Illustrator, Photoshop and Acrobat Pro. We will also cover some bits and pieces using other software.

Adobe software has good documentation check it out via menu> help in any application. Don't muck through.

Tutorial videos via:

<http://tv.adobe.com/>

2 Vector graphics: the object and property model

One of the most useful things to understand when using illustrator (and in general for any vector graphics program) is how illustrator handles the things you draw. The most fundamental concept is what I term here the object and property model.

Object: Any single entity drawn on the artboard that may be selected using the selection tool and have properties changed to the object as a whole. Direct selection may allow for individual components of an object to be changed (e.g. anchor points (nodes) on a path).

Property: Any attribute of the object that can be changed, for example stroke width, colour etc.

We have already drawn many objects, such as rectangles on the screen, point text, area-text, free-form lines (using the pencil tool), precise lines (using the pen tool). If we use the select tool then we can select individual objects and can do things to them, such as resizing or changing one or more properties. The other main type of object that we will encounter is raster images.

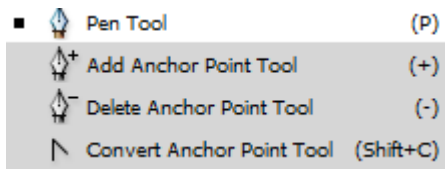
In general you will use objects that belong to one of the following groups:

- Bezier curve (path) objects
- Type objects
- Raster image objects

There are of course many more types of objects that can be drawn. And there are special objects that can be created using more than one object.

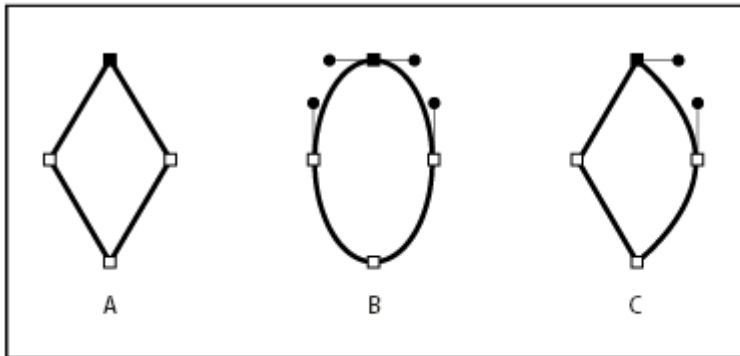
2.1 Bezier curves (paths).

Understanding how paths work is an essential skill. If you click and drag on the pen tool you will see that it is a tool group with 4 different modes.



Paths are single lines that may only be continuous loops (except for compound paths), they cannot fork, merge etc. They are made up of a sequence of anchor points (aka vertices, nodes) that in the case of straight line segments have no other information and in the case of curved lines will have direction lines (handles) to describe the curves.

There are two main types of anchor points: smooth points and corner points.











Points on a path

A. Four corner points **B.** Four smooth points **C.** Combination of corner and smooth points

Smooth points: Smooth points have handles that are at 180° to each other and tangential to the path, the length of the handles will dictate the shape of the path.

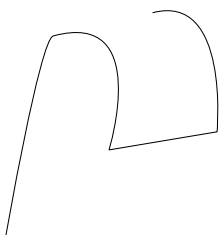
Corner points: Have handles that are independent or no handles at all.

There are several states that anchor points can be in and there are certain ways to switch between the states. These are outlined in the table that follows.

Name	Type	How to create this type of anchor point	Modifying path
Corner point no handles	Corner point	Click once on the anchor point using the convert anchor point tool. 	Can move anchor point around with direct selection 
Smooth point even length handles	Smooth point	Click and drag with the convert anchor point tool 	Can move anchor point around with direct selection  Click and drag with the convert anchor point tool to edit (this ensures that handles are even.)
Smooth point odd length handles	Smooth point	After clicking and dragging with the convert anchor point tool  switch to the direct selection tool and change the handle lengths independently	Can move anchor point around with direct selection  Can modify handles further using the direct selection tool.
Corner point with handles	Corner point	After clicking and dragging with the convert anchor point tool  . Drag the handles with the convert tool so that they are independent.	Can move anchor point around with direct selection  Can modify handles further using the direct selection tool.

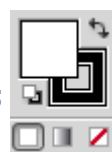
TIP: if you make one handle to short you may not be able to select it. You will then need to convert back to the desired anchor point type using the method listed in the table.

Do this: Draw a shape that matches that drawn below, using what you have learnt about paths.



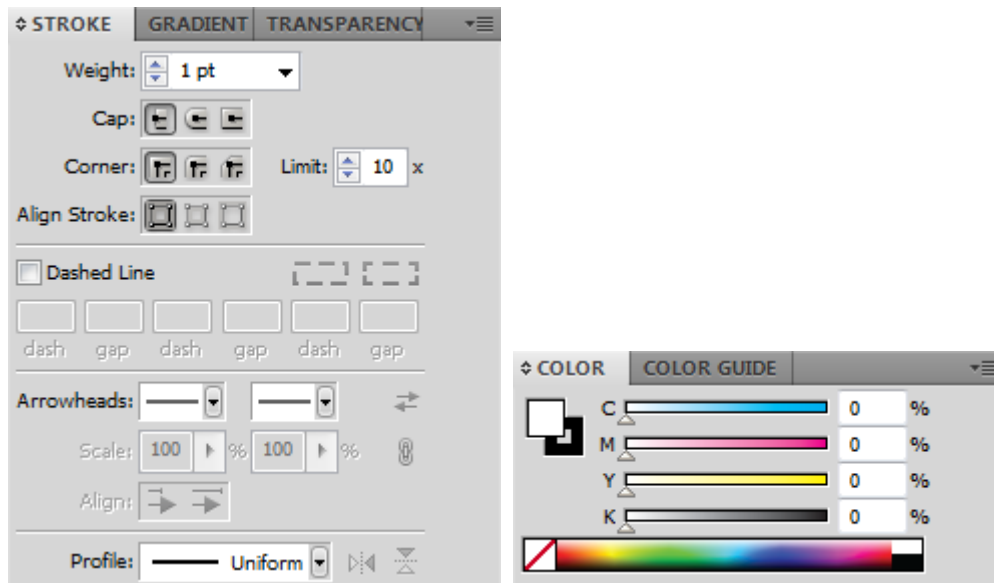
TIP: I often find it easiest to get the basic shape of a path by clicking to create a few normal anchor points and then editing these to match the shape I want rather than using the pen tool to make curved paths.

2.2 Setting and modifying object properties

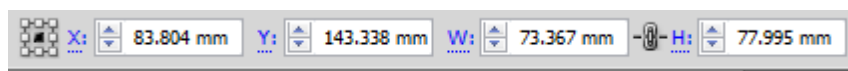


2.2.1 Stroke and fill

Stroke and fill are the two fundamental properties of paths (including shapes) drawn on the screen



2.2.2 Position and size



Q: Where is 0,0?

A:

2.2.3 Type

To come.

3 Controlling the illustration, keeping things in order.

In the beginning it is useful to pay more attention and keep control of the drawing order of objects in the layer menu. As you become more confident you can get things done quicker, because you will balance this control of the artwork with the fastest ways of doing particular things.

3.1 Layer control

Layer control is useful if your artwork requires that you have a lot of overlapping objects. You can select objects in the layer menu by clicking on the circle to the right of the layer name.

3.2 Group control

Group control is useful for objects that you will infrequently need to change relative to each other. Demo scale bar.

4 Placing rasters (e.g. photos) in illustrator.

You can do this by dragging and dropping them into your artboard, or copying and pasting them, or via file>place. These approaches are advised over opening them directly in illustrator.

DO THIS: Insert both “Reflected_006.jpg” and “Refelected_007” using two different methods listed above.

Notice that one image is much larger than the other. Why is that? Get info about the images (using details view in finder or windows explorer). The images have the same pixel count. I scanned one of these and then modified the other to make it a different size to demonstrate a point.

Q: Which image do you think is original and why?

A:

For raster file types resolution (a muddied term) = pixel dimensions (in one direction)/ “image size”

4.1 *Linking vs. embedded*

Link is best: file size larger etc. Easiest to keep all files together.

Demo breaking links. Editing and updating. Could be a poster with figures.

4.2 *clipping masks with images , plates*

Make clipping mask square. And path to grid tool.

5 Advanced text control

Area type options

Background colour for area type

Glyphs (special characters)

Superscript

Anything else?