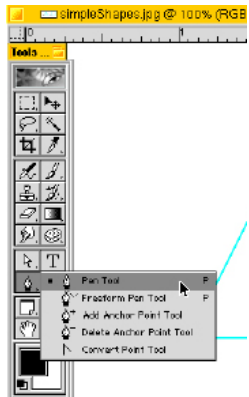


In this lesson we will just begin to learn some of the qualities of the pen tool. It is easily the most diverse and dynamic tool of the bunch. Open up

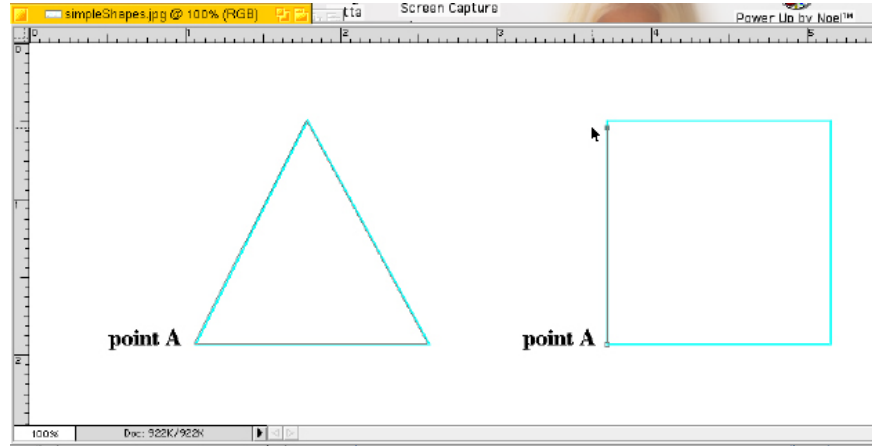
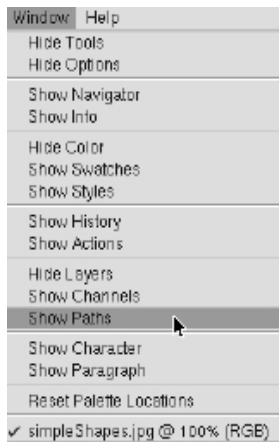


the *simpleShapes.jpg* file and select the pen tool. We will start with some very simple steps to get acquainted with the tool.

Simply, click the pen on the bottom left corner (*point A*). Now click again at each point of the triangle, notice that when you get back to *point A* there is a small “o” next

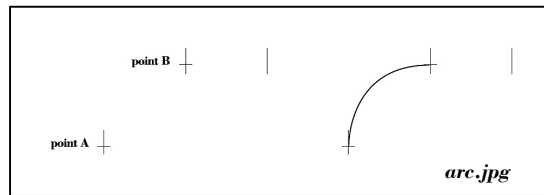
to the pen. Click at this point and you will complete and close the path. Now, start with the *point A* of the square. This time hold down the *shift* key as you make the second click, notice it draws a perfectly straight line no matter if you were a little left or right of the exact point. Oops! my point was perfectly straight, but it was a little short in height (*screen 1*). No problem, hold down the *command* key (this is the one with the apple on it) and you will see the pen change to a white cursor. Click on the point that is low and drag it to the proper position. Remember to hold the *shift* key down while you do this to make it perfectly straight. Now release the *command* key and continue around the square, holding down the *shift* key for vertical and horizontal lines. Again when you get back to *point A* it will close the path.

What you have been creating here are known as working paths, which are quite simply lines connecting two points. Paths can be used for a number of things that we will get more involved with later on. Similar to the layers, there is a pallet for paths. Select *show paths* from the “*Window*” pull down menu. Also, like you do with the layers, you should name your paths. Double click on the “working path” in the pallet, having the *option* key pushed down, and type in what you wish to name that particular path.



▲ *Screen 1*

Of course there are many more exciting objects to draw other than triangles and squares, so we must learn how to draw curves. The pen tool has an added feature that allows you to draw any style complex or simple curve. It utilizes a bézier curve to create flowing arcs. To learn how these work open the file *arc.jpg* (*shown below*).



You will notice there are two cross hairs and a vertical line. Also, on each of the remaining support files in this section I have included a drawn example. Your work should look exactly like mine in these instances. At the end of this section I will show how to trace right over my work, you should do this on all of the examples here.

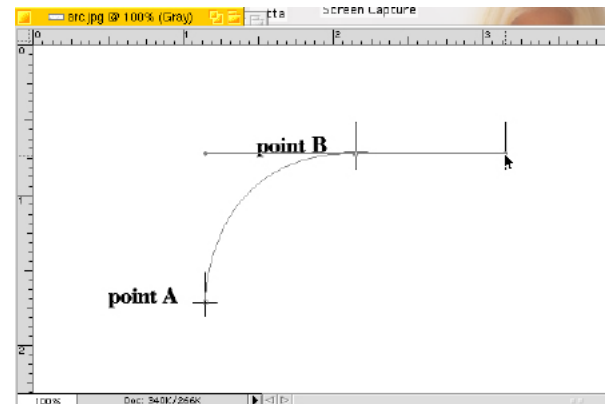
Okay, let's draw some curves. Start by selecting the pen tool and click it on the cross hair at *point A*, then click and drag to the right on *point B*. Hold the *shift* key down while you are dragging and go to the edge of the vertical rule (*screen 2*)....done.

HINT:

Remember to use the *command* key to toggle back and forth with the pen and white cursor. Once a point is drawn you can always edit it with the white cursor. Also notice that while you are working on a path the points are all shown with a small square and once the path is closed all the points seem to disappear. They are all actually still there. Just click on the path or a point with the white cursor and you will once again see all of the individual points that make up that path.

Try moving them around and get the feel for how easy they are to edit. Move the points and then click on the line and move it, notice the portion between two points is all that moves. To move two or more sections, simply hold down the *shift* key and click on as many lines as you wish to move at once.

▼ *Screen 2*



Well, let's see, so far you know how to draw a perfectly straight line, some simple shapes and a simple arc or *segment* of a curve. Not bad, not bad at all. I guess then the next step would be to learn complex and compound curves. Just so happens we have a couple examples to work with...lol.

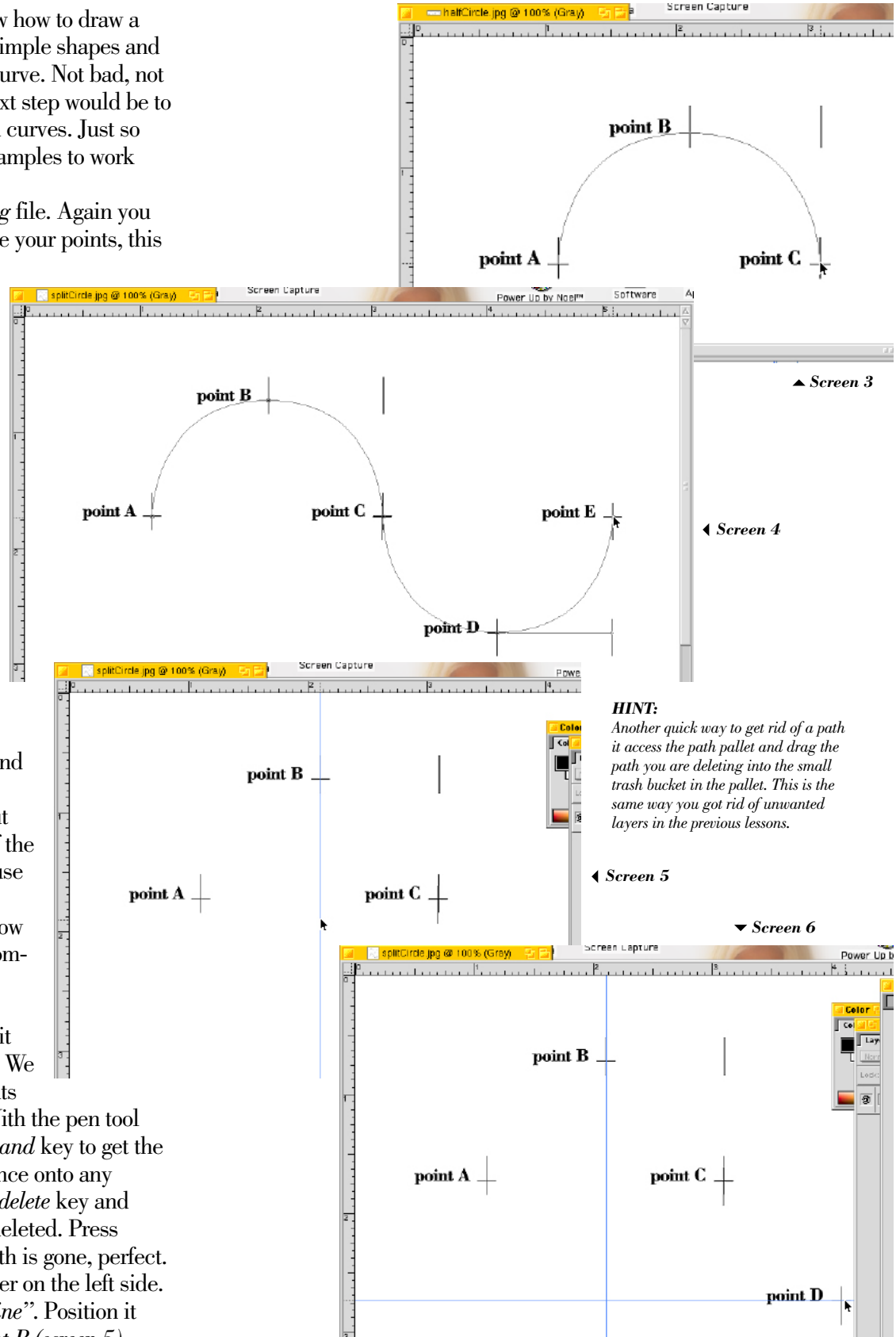
Okay, open the *halfCircle.jpg* file. Again you see cross hairs for you to make your points, this time there are three. Begin as you did with the arc by selecting the pen tool and clicking on *point A*. Now, click on *point B* and drag the "handle bars" to the vertical line. Release the mouse button and then just click on *point C* (screen 3).

Wow, it completed the curve for you, and perfectly I might add. How cool is that? This is the real beauty of the bézier curve, it blends two segments of a curve seamlessly.

Let's keep going. Open up *splitCircle.jpg* and repeat the steps of the half circle up to and including *point C*. Now go to *point D* and click and drag out the handle bars to the edge of the vertical line. Release the mouse button and click on *point E* (screen 4). Neat!!! You have now added complex curves and compound curves to your resumé. I am impressed.

Now instead of having a split circle, let's make a full circle. We will use all the reference points from the *splitCircle.jpg* file. With the pen tool still selected, press the *command* key to get the white cursor and then click once onto any portion of the path. Press the *delete* key and notice only that portion gets deleted. Press *delete* again and the whole path is gone, perfect.

Drag the cursor over the ruler on the left side. Click and drag out a "guide line". Position it with the vertical cross on *point B* (screen 5). Click and drag out a guide line from the top ruler to the horizontal cross on *point D* (screen 6).



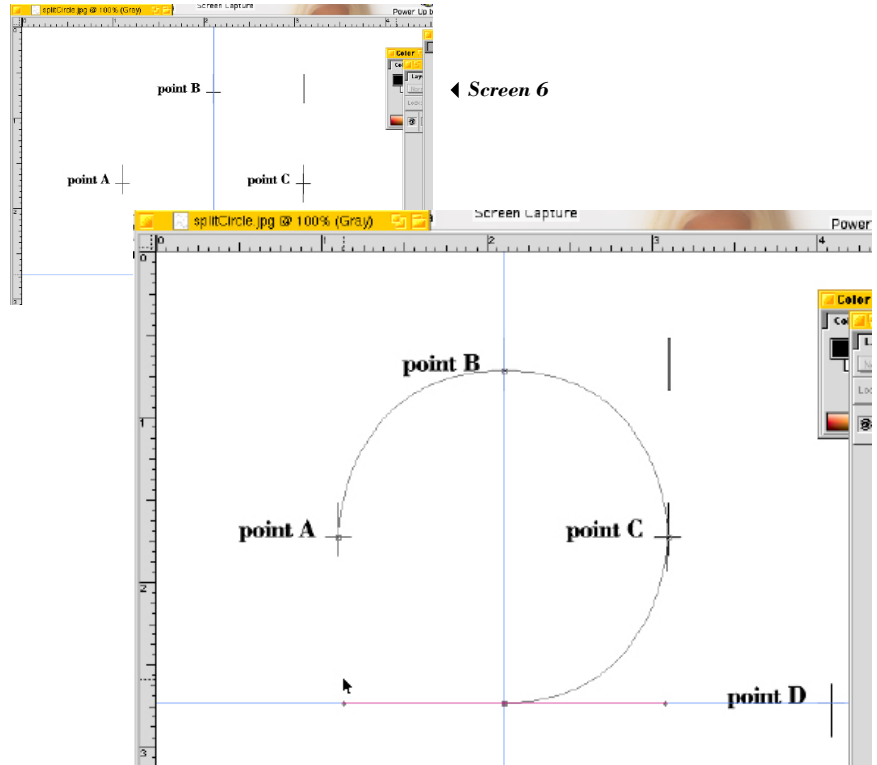
Hey, pretty cool about the guide lines, huh? Did you know they were there? You will use them often. If your rulers are not showing, although they should default to be shown, simply press *command r* and they will appear. This is a toggle command so press it again and they go. I prefer to keep them on all of the time. You will also notice as you zoom in on an image that the rulers have more increments for precision measurements. When you are working on this lesson have the files at 100% magnification. I think you will find this the best to work with. Most likely they open at 66.7% (it tells you in the top tab of the file, To get to 100%, simply click the magnifying glass once on the image.

Okay, back to our circle. Your screen should look like *screen 6*, no shape, just guide lines and cross hairs. Perfect, now begin as you did before. Select the pen tool click at *point A*, then click and drag at *point B*. Click once again at *point C*. Instead of going to *point D*, go to the left and click on the intersection of the guide lines (*screen 7*). Drag the handle bars out to the left, keeping the shift key held down for a perfect arc. Try and *visually* drag out the handle bar to the same distance as *point A*, without using a guide line. You will need to train your eye and hand to recognize visually how to pull and manipulate the arcs and segments. Finally, release the mouse button and click back at *point A* (*screen 8*). Notice this makes a closed path like the triangle and square, where as all the other arcs you drew were open paths.

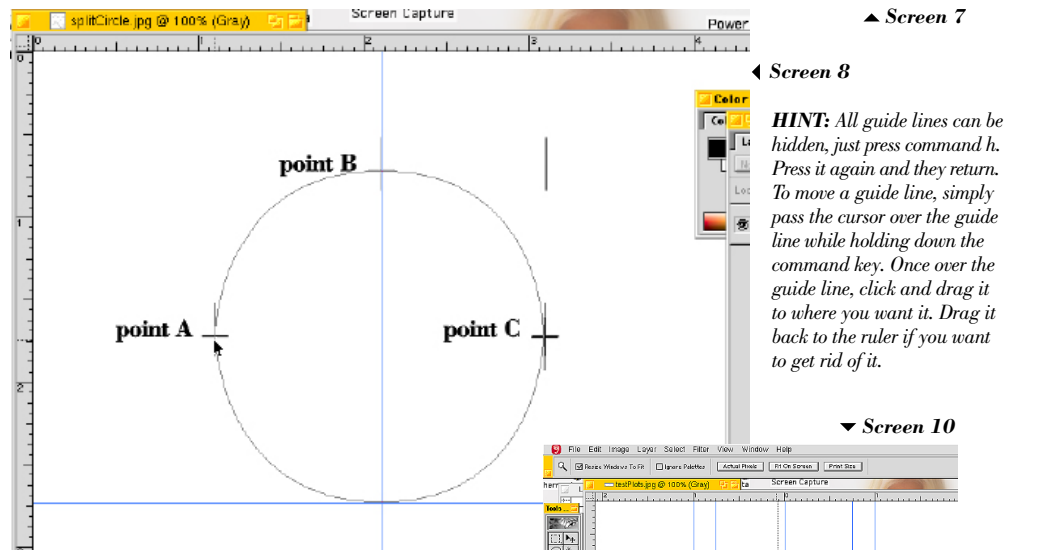
You should be psyched!!!! You just drew a perfect circle *freehand*.

You can ask any technical or fine illustrator what the hardest thing to draw is? They will tell you it is a perfect circle. And you have just drawn one, nice job!

For some great extra practice and also to get used to drawing over images. Open each of the drawing files and duplicate the background layer, then shut it off by clicking the eyeball. Select the *copied* layer and set the opacity to about 30%, so it is very light. Now trace over my arcs and match them exactly. In the next section we will apply more involved paths to photos.



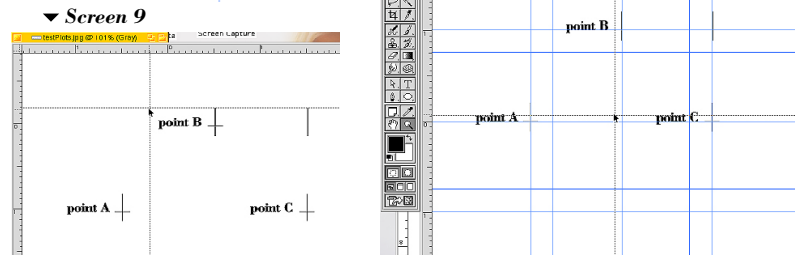
▲ Screen 7



◀ Screen 8

HINT: All guide lines can be hidden, just press *command h*. Press it again and they return. To move a guide line, simply pass the cursor over the guide line while holding down the *command* key. Once over the guide line, click and drag it to where you want it. Drag it back to the ruler if you want to get rid of it.

▼ Screen 10



▼ Screen 9

More Practice: Open the *testPlots.jpg* file and move the ruler's center point. This is easily done by clicking in the top left corner of the ruler and dragging out the cross hairs. Line them up with *point B* (*screen 9*). Now add all of your needed guide lines as well as new ones so you can draw concentric circles. Once you find the center with your guide lines, click and drag out the center point cross hairs to the actual center (*screen 10*). Now make uniform increments from the center point to draw your circles. Draw each circle just as you did on *screen 8*.