Illustrator: Aligning Irregular Shapes

Illustrator's tools are powerful, but sometimes they can't do the job without help. Circles and rectangles of unit sizes were easy, but more complex shapes made up of multiple pieces were a big problem. With some effort, I found a method that works.

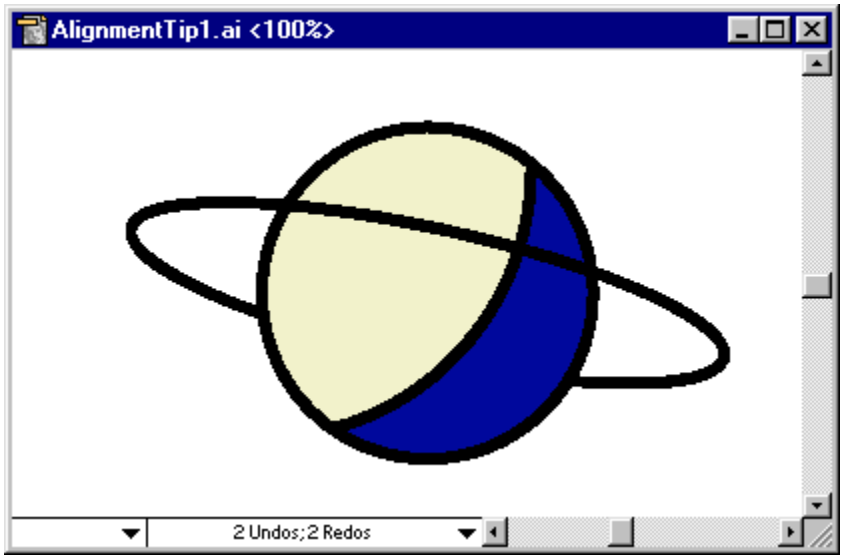
The Problem

Illustrator has a grid which is useful for aligning objects. If View|Snap to grid is active, control points will jump to the closest grid crossing. This is extremely handy for creating nested concentric circles and many other tasks. Yet it's not very useful when you have an object made up of two or more irregular pieces that have control points in weird places. If you have to manipulate the pieces individually, it's easy to get them misaligned. Then you have to use Undo a lot, and re-do all your work. It's no fun.

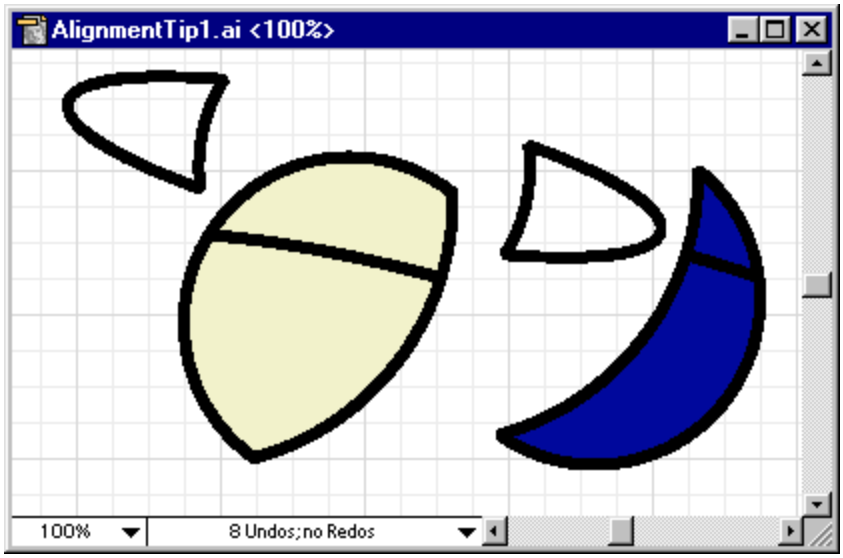
Granted, Illustrator can snap to existing control points on other shapes. Unfortunately, there are circumstances where it's not enough. For example, how can you align an object to a place where there is no point? Then you're out of luck, unless you know this technique.

Let's look at a simplified example. The following image is made of three pieces: one blue crescent, one yellow piece that completes the circle, and the outer ring lines. Together they make up a simple ringed planet.

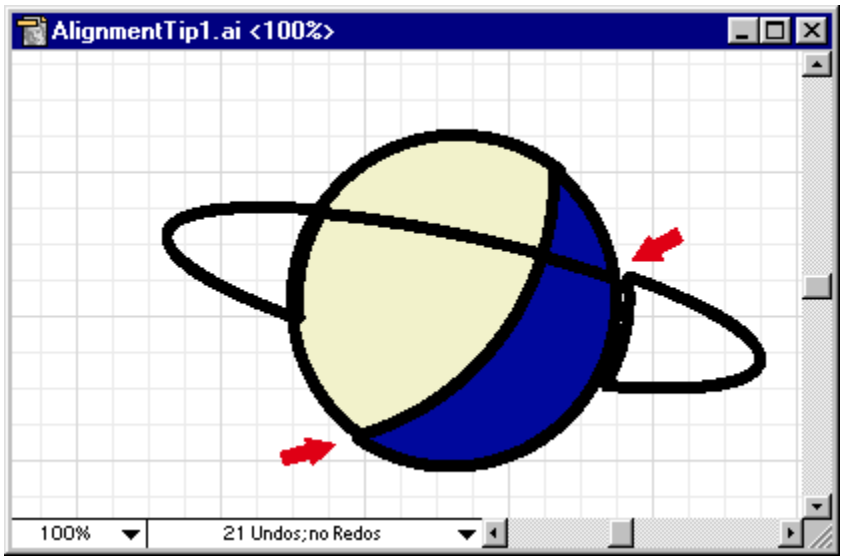
(If you want to follow along with the sample image, you can download it. It's a 17K ZIP file in Illustrator 5.0 format.)



Now let's blow it up, scattering the pieces randomly. Then we'll try to put it back together.



Let's try to move the pieces back together. It doesn't quite work, no matter how we try. The pieces don't fit together like they did originally. Even if the grid were off, they still wouldn't align exactly as they did when we started work. The arrows point to some obvious misalignments.



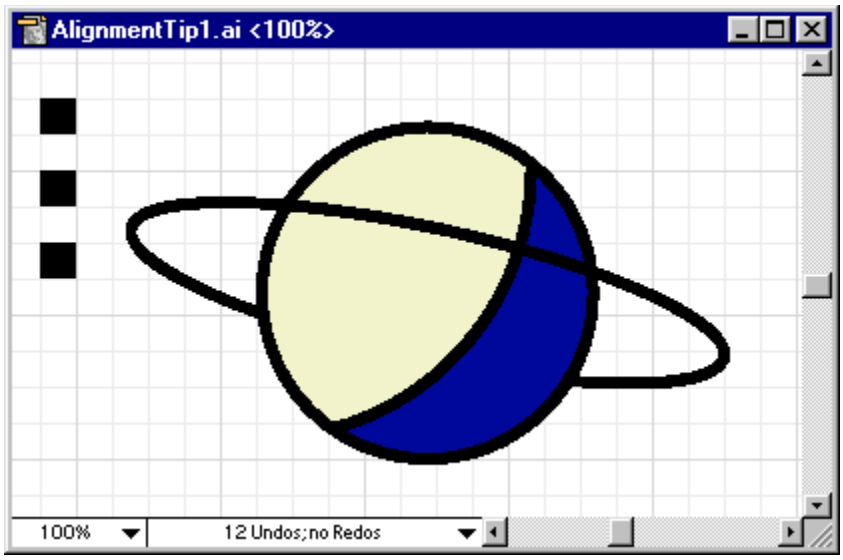
What can we do about a situation like this?

A Solution: Handles

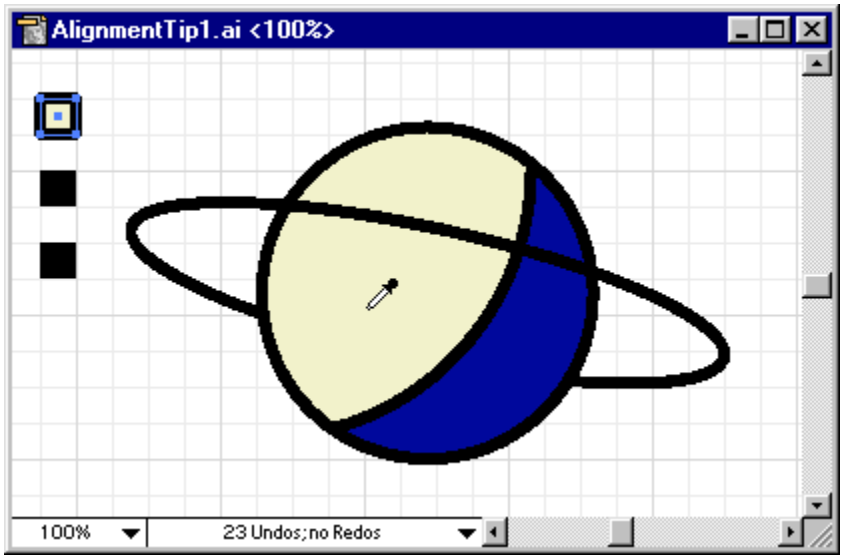
The key is to use the grid, but not to align the existing pieces . We'll create some new objects and use them as handles for the originals. It will be easy to align the handles, and when they're aligned, the original pieces will be aligned as well.

Re-load the original, aligned image. Turn the grid on. To one side of the window, make as many evenly spaced one-unit squares as there are pieces of your image (three, in this case). We're

going to make each square correspond with a piece of the hard-to-align image. The squares act as handles to the pieces.

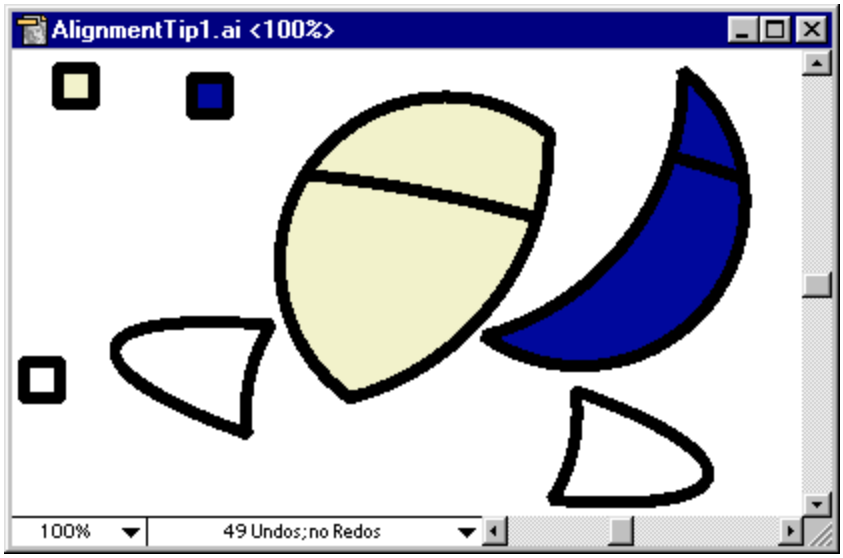


Select the first handle. Using the eyedropper, click on the first piece of the image (the yellow one). The handle now has the same outline and fill as the piece. Select the piece and the handle and group them. Repeat the process for rest of the pieces and handles. (This step isn't necessary, but comes in handy sometimes.)

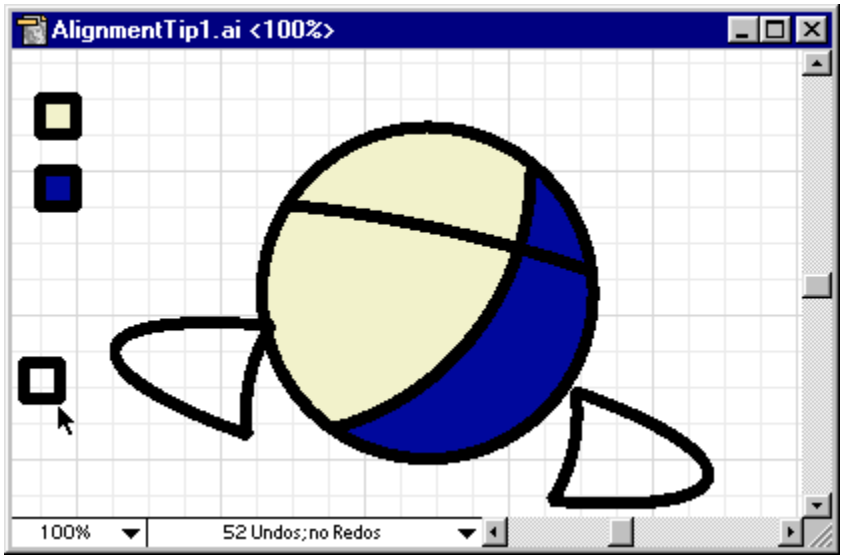


When this is done, we'll have a set of handles that are (a) nicely aligned, and (b) have colors identical to their corresponding pieces. This helps to tell the handles apart. Yellow piece - yellow handle. Simple.

Now we can turn off the grid, move things around, and work on the pieces individually. Note that the handles move as well.



When you want to align the pieces again, what was previously impossible is now as simple as turning on the grid back on, then moving the handles back into alignment. In the image below, we're part way through re-alignment.



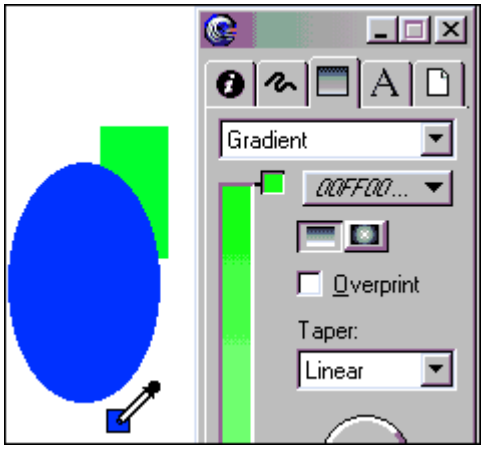
And when all the handles are back in line, the original image is perfectly re-assembled.

Gradient fills in Freehand work very much like a solid fill. You create an object and fill with the gradient. Colors, color distribution and angle of the fill are edited through the Fill inspector.

Text objects must be converted to paths before a gradient fill can be applied. Select the text object with the Selection tool and

choose Text>Convert to Paths. We will look at text later, but in case you decide to experiment before I get there, I wanted to warn you that text has some special rules.

All gradient fill controls are set through the Fill inspector.



With the Eyedropper tool selected, click and drag a color chip from any object in the document to the color ramp to add colors to the gradient fill. Below: A color chip is dropped on the color ramp to add the color to the gradient.

Start by creating a rectangle or ellipse for practice. There is no restriction on the complexity of the object you can fill with a gradient, but it is usually easier to understand how the color is working when you are working with a simple shape. Make sure your object is selected.

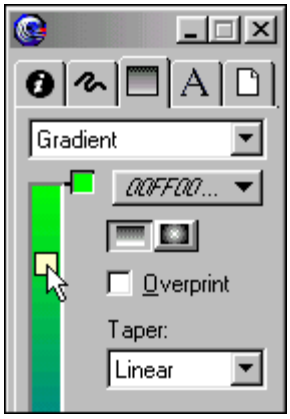
Choose Gradient from the drop down selector in the Fill inspector. The gradient options screen will appear, and the object will fill with the default back to white gradient, or the previous custom gradient.

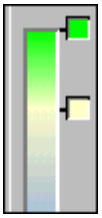
You can choose Linear or Radial style by clicking on the appropriate button. The linear and logarithmic options distribute the color in different ways. A linear gradient blends from one color to another in equal sections. Logarithmic gradients start blending in small steps, with the size of the steps increasing as the blend nears the second color.

Click and drag the Angle dial to set the angle of the gradient. 360 degrees sets the gradient direction left to right.

Freehand has several color creation or picking options, and any may be used to access the colors required for a gradient fill. The easiest way to work with color on a Freehand gradient fill is to drag the color to the color ramp, which is the long color bar on the left side of the gradient window. Initially, the default gradient has a black color well at the top and a white color well at the bottom of the ramp. Drag a new color on top of the small wells, or choose a color from the drop down color list.

For a really handy color option, you can



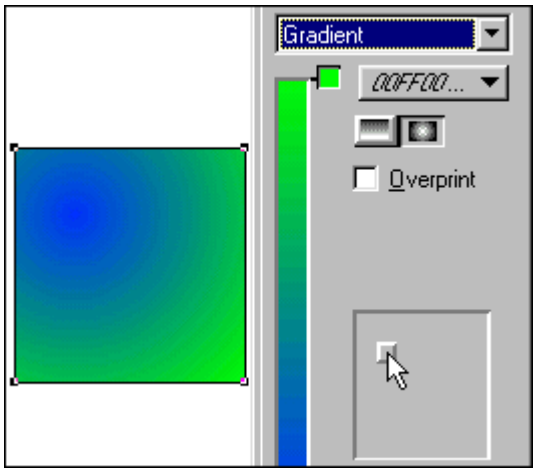


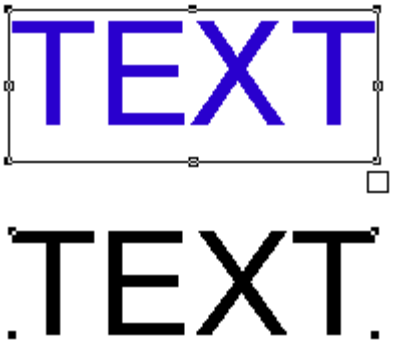
also choose the Eyedropper tool, and click and drag on any color within your document to the desired color well. It doesn't get much easier than this for matching gradient fills to other objects in your document.

To create a multicolor gradient, simply click and drag the new color to the color bar and drop it in the desired location. A new color well is added beside the color ramp, and can be dragged up or down to precisely position the color. Add as many new colors as you require for your custom gradient fill.

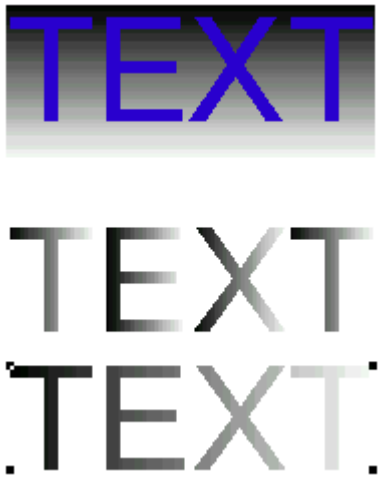
To remove a color from the color ramp, simply drag it from the Fill inspector window.

Radial fills are completed in the same way. You have the option to set the center point for the radial fill by dragging the icon in the Locate Center area of the Gradient window.





The top sample is text. The lower sample is text that has been converted to paths.



The top sample is text that has been filled with a gradient fill. The bounding box receives the fill. In the middle sample, the text has been converted to paths so the letters receive the fill, but each character is treated as a separate object with its own fill. In the lower sample, the objects have been joined to allow a continuous gradient fill.

Gradient Fills for Text

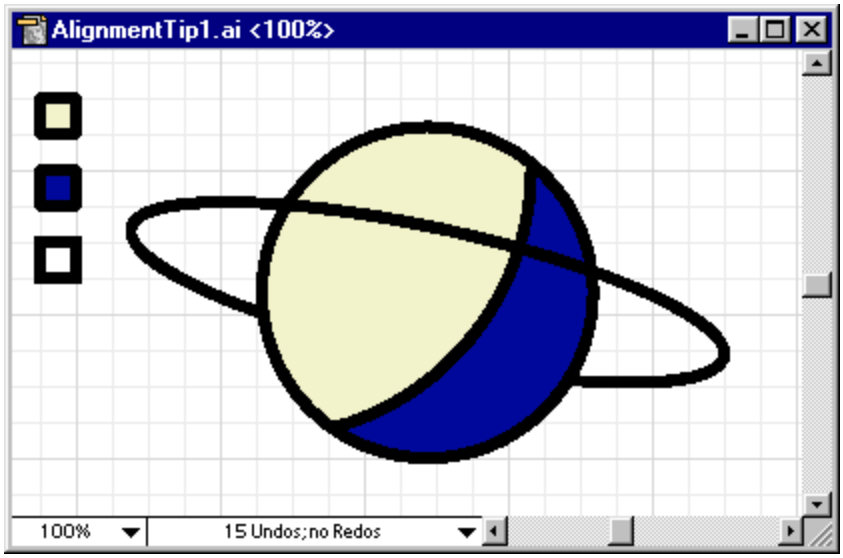
Text objects in Freehand cannot be filled with gradient fills. However, by converting the text object to paths, the text becomes the same as any other object. Converting the text is a simple operation, but make sure that you have all the editing you wish to do before you do the conversion. Text that has been changed to outlines cannot be edited as text.

To convert, select your text object and select Text>Convert to Paths from the main menu. That's it! In the samples at the left, note how the selection borders change from the regular text selection (blue) with a bounding box and the text which has been converted to paths with selection handles only.

When you apply a gradient fill to a text object that has not been converted to paths, the bounding box is filled with the gradient as shown here. The second sample shows the results of a horizontal gradient fill when the text has been converted to paths.

However, we often require that the gradient fill treats our text as one object. In order to have the gradient move across the individual objects they must be joined. Choose Modify>Join to create this effect, as shown in the bottom sample at left.

For even more control of a gradient fill look, continue on to the next page to learn the basics of blends in Freehand.



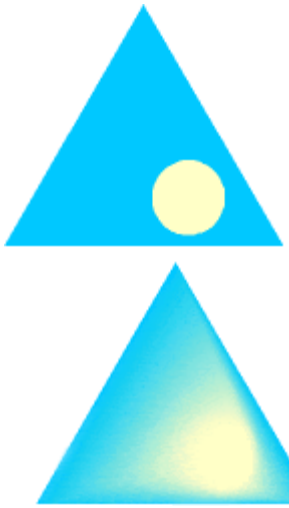
I warned earlier in this tutorial that we would only be taking a very short look at blends in this article. It warrants an entire tutorial, but I did want to include the idea here, since often the perfect effect may not be possible with a gradient fill, but can be accomplished with a blend.

Quite simply, a blend creates a gradient fill look, but with many controls available to you. A gradient runs from one color to another. A blend combines two objects together in incremental steps. In the sample at the left, the lower sample is a blend of the two objects above.

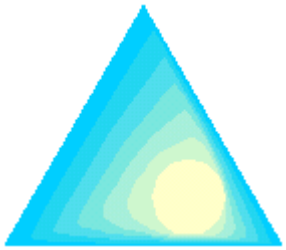
For one click blending, open the Xtra Operations toolbar.

Options to create a blend

If you are going to be working with blends, it is worth opening the Xtra Operations toolbar as shown here. The blend option, shown highlighted by red, gives you one click access to blends. Choose Window>Toolbars>Xtra Operations to open the toolbar. You can also create a blend through the menu by choosing Modify>Combine>Blend **or** Xtras>Create>Blend. The toolbar or menu methods all accomplish exactly the same results. Only one is required to create a blend.



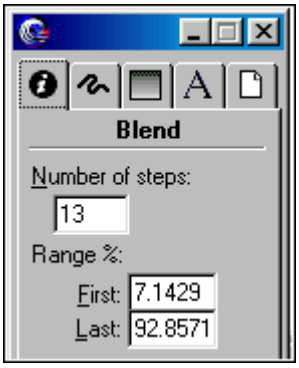
The samples here show the objects before and after blending.



Number of blend steps reduced to 5.

Draw two objects. Fill with desired color and, in most cases, remove the stroke, especially if you are looking to create a custom gradient fill look.

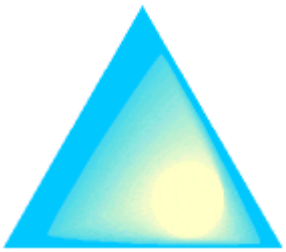
Select both objects with the Pointer tool. Click on the Blend tool from Xtra Operations toolbar or choose one of the menu commands described above. The two objects will blend.



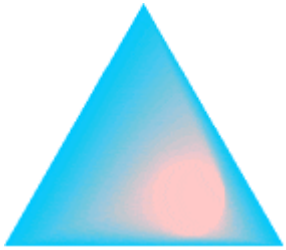
The Object Inspector is used to change the number of steps in the blend, or where the first and last blend shapes are placed. Highlight the value you wish to change and enter the new number. The more steps you specify, the smoother the blend will be. The first blended sample at the left has 50 steps, while the second sample has had the steps reduced to 5.

NOTE: When you have entered the values, you will have to

use your ENTER key to activate changes.



The first and last range % setting determines where the first and last blend steps will be placed. These values are adjusted automatically as you change the number of steps, providing a smooth transition, but can be changed for special effects. The final blend sample at the right has the first and last range % changed to 30% and 100% respectively.



Finally, for this brief look at blends, you may wish to edit either the start or end object. With the Pointer tool selected, and the ALT or OPTION key pressed down, click on the object you wish to change. Only that object will be selected and you can change the color, size, position, etc. The blend will redraw with your new settings. In the sample shown here, I changed the color of the

circle and the blend was changed to reflect the new information.

This has only been a brief glimpse at the power of blends in Freehand. You can control the blends in many more ways, choosing where each object will blend in relation to the next object, blending along a path, editing the blend path ... if you can imagine a blend, there is a way to do it. However, that is for another time. In the meantime, experiment with this powerful tool, get comfortable with it, and you will find yourself returning to use blends over and over.