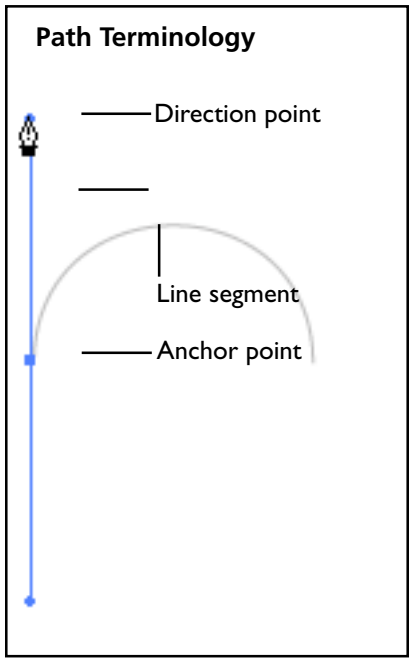
Drawing Curves: Pen tool basics



Set Stroke and Fill colors

- For line drawings choose no fill.

Which way do I drag?

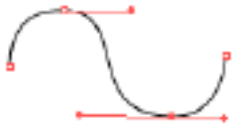
- Use the Pen tool to click, or click and drag at each anchor point
- * Click and drag in the direction of the curve

Where do I put the anchors?

- Put anchors at the SIDES of curves, not at the tops.

correct

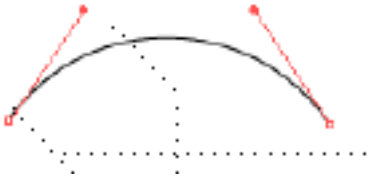
incorrect



How far do I drag?

- The longer the arm, the steeper the curve

- Use the One-Third rule to create symmetrical arcs: make the arms of the direction points about one third of the straight-line length of the curve.



How many anchors do I need?

Use as few as possible to achieve the desired shape.

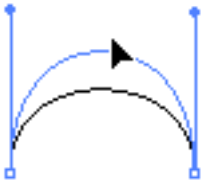
correct

incorrect

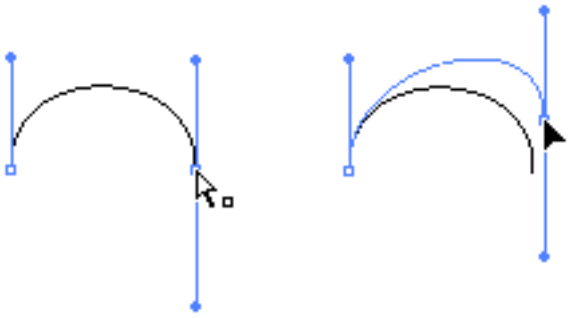
Editing Paths

To adjust curves

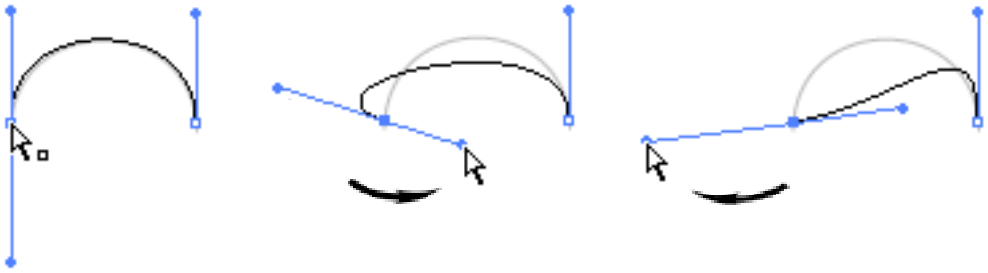
- Drag line segments using the Direct Select tool



- Drag direction line anchors using the Direct select tool



- Drag direction line end points using the Direct select tool

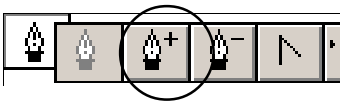


To add to a path

If you switch tools while drawing, then return to the pen tool, a new object will be started. If instead, you want to add to a path that's already on the page:

1. Position the pen tool over an anchor, you should see a slash under the cursor icon 

2. Click (or click and drag, as nee



To add anchors

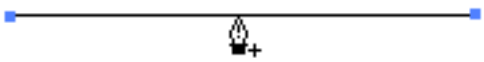
1. Pop-out the Pen Tool set.
2. Choose the **Add Anchor tool**, the one that has a + next to it.
3. Click on any segment line to add anchor points.

Add an anchor to a curve

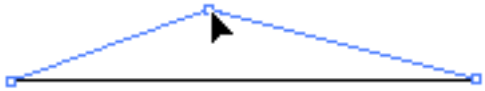
Adding a point to a curved line results in a *smooth-curve* point (with direction point handles)

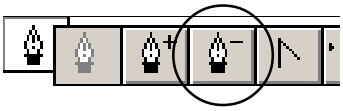
Add an anchor to a straight line

Clicking on a straight line adds an anchor without direction points.



Drag the new point with the Direct Selection tool to create an angle in the line.



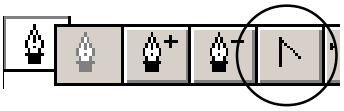


To remove anchors

1. Select the **Delete Anchor Point tool** from the pop-out set of pen tools.
2. Click with the tool on any point you want to remove.

Note: The Pen Tool automatically

- turns into the “Remove Anchor” tool **over an anchor**
- turns into the “Add Anchor” tool **over a line segment**

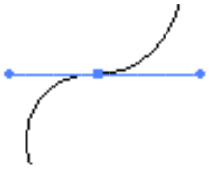


Converting Anchor Points

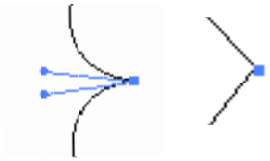
The **Convert Anchor tool** coverts *corner points* to *smooth points* and vice versa.

Note: The Pen Tool converts anchors when you hold down the ALT key on the keyboard.

Smooth point

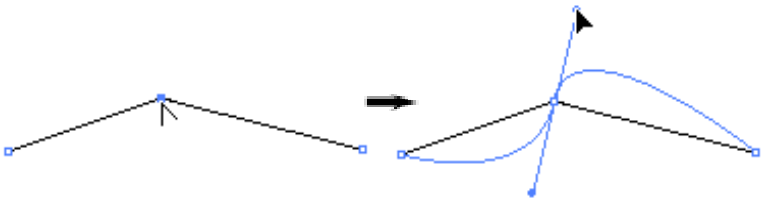


Corner points



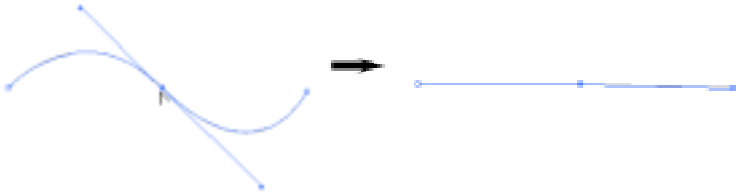
To convert an angle into a curve

- Position the **Convert Anchor Point tool** over the anchor point and **drag** to pull out the direction points.



To convert a curve into a straight line

- Position the **Convert Anchor Point tool** over the anchor, then **click once**.

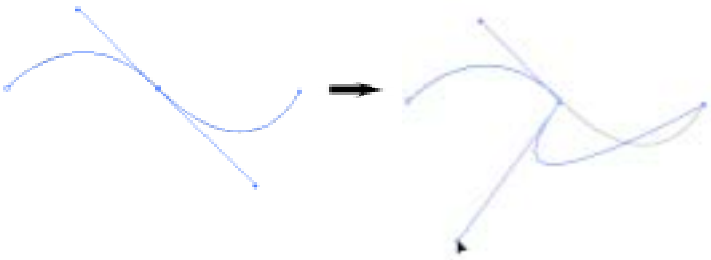


To unlock a pair of direction lines

The angle of the direction lines that extend from an anchor, by default, make a straight line, so that the curves on either side of the anchor mirror one another.

When you use the Direct Selection tool to drag one directional arm, the other will swing in tandem.

- To "unhinge" the two curves position the Convert anchor tool over one of the endpoints of a direction line and **drag**.

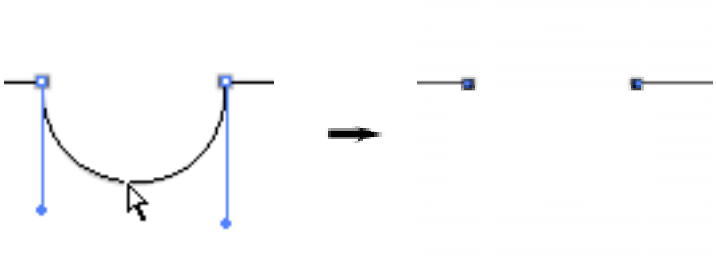


Deleting parts of a path

To remove a line segment

You have already learned how to use the erase tool to erase part of a segment of a path. Here's how to quickly remove an entire segment:

1. Using the Direct Select Tool, click on the segment of line you want to remove. You should see the endpoint handles for a curve, or if you click on a straight line segment, the anchors will be white.
2. Press the DELETE key. The segment will be dropped and you now have two paths.



To Split Paths

1. Click on a line segment with the **Scissors Tool.**
2. Get the Select tool and click on ant part of the shape, you'll see that it is now two objects.

Erase line segments

To erase only *part* of a line segment, use the eraser tool.

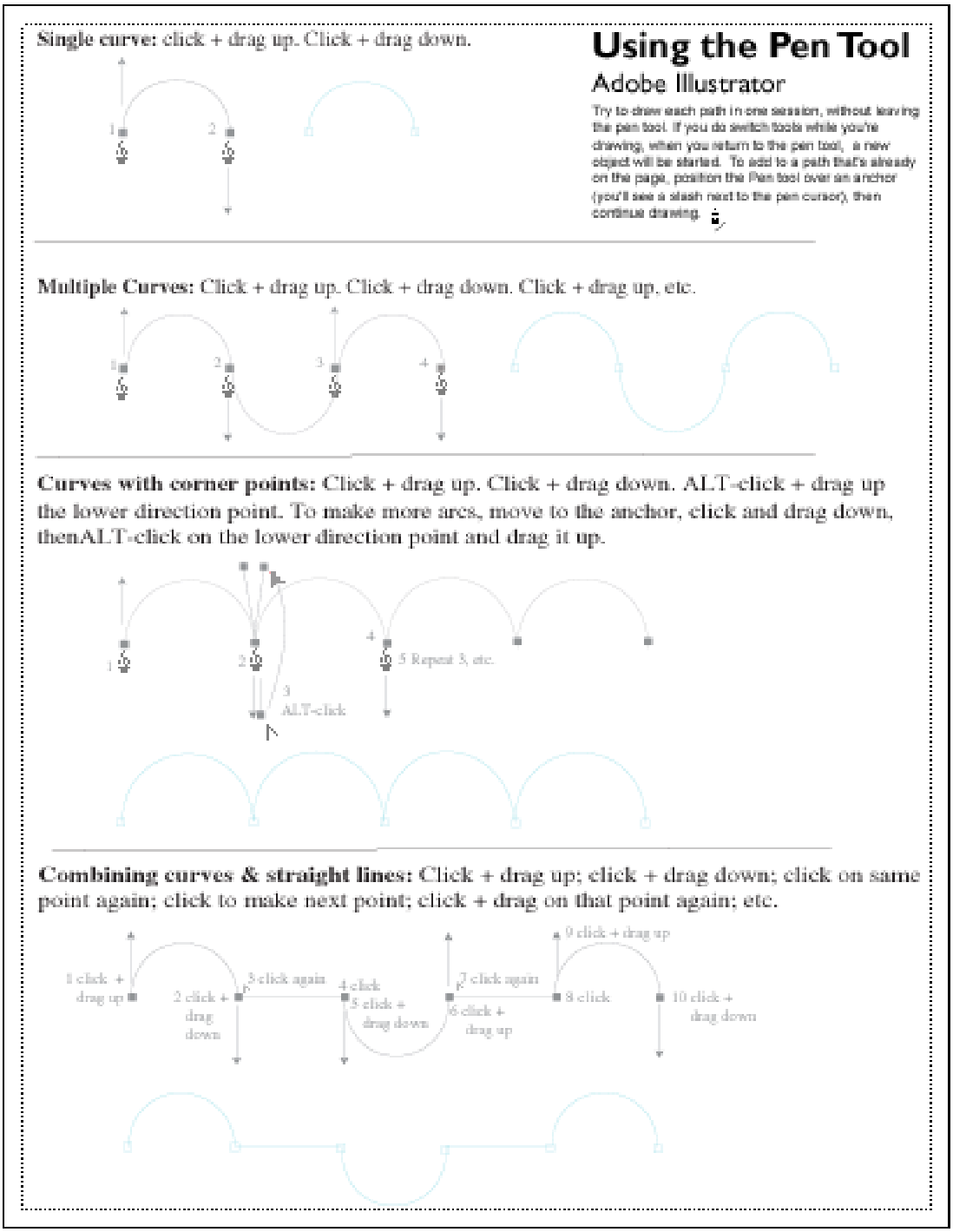
1. To remove segments of a path, you can also "rub" with the erase tool.

Once segments are removed, the remaining sections become separate objects.

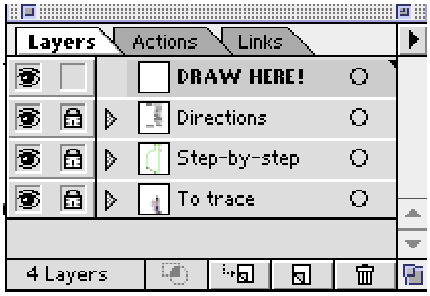
Exercise one: Using the Pen tool

Open the Illustrator file “paths.ai.”

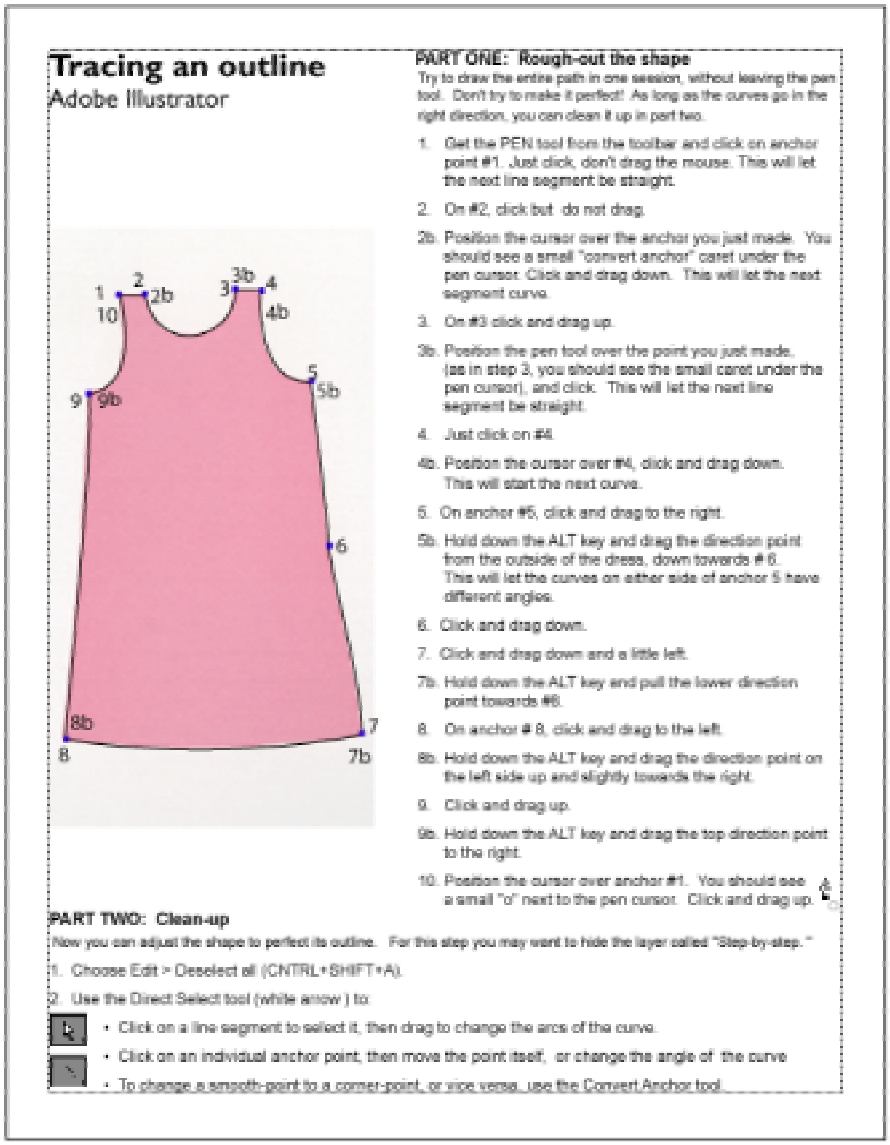
Follow the directions on the page to trace the light blue paths.



Exercise Two: Tracing a simple outline



1. Open the Illustrator file called “trace.ai”
2. In the Layers palette, click on the top layer name (DRAW HERE!)
3. Follow the step by step directions on the Illustrator page.



Tracing an outline
Adobe Illustrator

PART ONE: Rough-out the shape

Try to draw the entire path in one session, without leaving the pen tool. Don't try to make it perfect! As long as the curves go in the right direction, you can clean it up in part two.

1. Get the PEN tool from the toolbar and click on anchor point #1. Just click, don't drag the mouse. This will let the next line segment be straight.
2. On #2, click but do not drag.
2b. Position the cursor over the anchor you just made. You should see a small "convert anchor" caret under the pen cursor. Click and drag down. This will let the next segment curve.
3. On #3 click and drag up.
3b. Position the pen tool over the point you just made, (as in step 3, you should see the small caret under the pen cursor), and click. This will let the next line segment be straight.
4. Just click on #4.
4b. Position the cursor over #4, click and drag down. This will start the next curve.
5. On anchor #5, click and drag to the right.
5b. Hold down the ALT key and drag the direction point from the outside of the dress, down towards # 6. This will let the curves on either side of anchor 5 have different angles.
6. Click and drag down.
7. Click and drag down and a little left.
7b. Hold down the ALT key and pull the lower direction point towards #8.
8. On anchor # 8, click and drag to the left.
8b. Hold down the ALT key and drag the direction point on the left side up and slightly towards the right.
9. Click and drag up.
9b. Hold down the ALT key and drag the top direction point to the right.
10. Position the cursor over anchor #1. You should see a small "o" next to the pen cursor. Click and drag up.

PART TWO: Clean-up

Now you can adjust the shape to perfect its outline. For this step you may want to hide the layer called "Step-by-step."

1. Choose Edit > Deselect all (CNTRL+SHIFT+A).
2. Use the Direct Select tool (white arrow) to

- Click on a line segment to select it, then drag to change the arcs of the curve.
- Click on an individual anchor point, then move the point itself, or change the angle of the curve
- To change a smooth-point to a corner-point, or vice versa, use the Convert Anchor tool.

Extra challenge: Try tracing without directions

1. Hide the layers named “Directions”, “Step-by-step,” and “DRAW HERE!”
   The layer named “To trace” should still be visible.
2. Create a new layer above the ”To trace” layer.
3. Start drawing!

Workflow for tracing a drawing

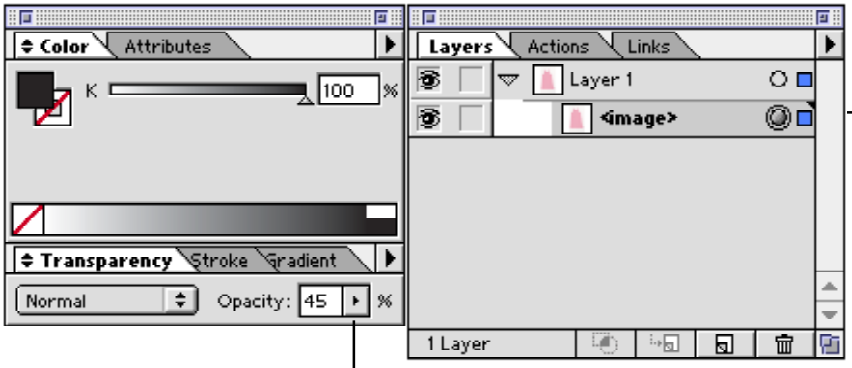
Import image to trace

You can import most any common image file format; bitmap (BMP, GIF, JPG,PSD, etc.) or vector graphic (AI, EPS, etc.)

1. Use File > Open, File > Place, or cut & paste an image via the clipboard.
2. Select the image object using the Select tool. Hold down the SHIFT key and drag to resize the image to the size you need.
   Note: Image resolution & quality are not a big issue here, as the important image is not intended to be a part of the final picture.

Use Layers

A. Fade out the image to trace



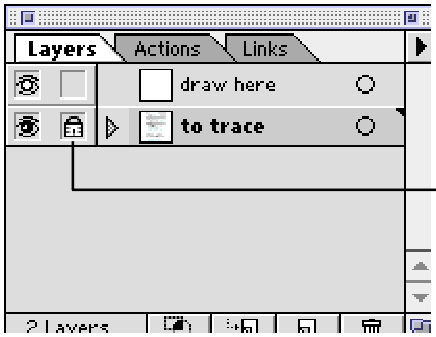
If the imported image is very dark it will be difficult to see what you draw.

To make the imported image transparent::

1, Select the object.

2. Locate the Transparency Palette (Under the Color palette)

3. To adjust the opacity either type in a percentage value, or use the pop-out slider.



B. Lock the tracing layer and create a new layer for your drawing

This will prevent you from accidentally selecting and affecting the image you want to trace, or accidentally moving the position of the underlying scan.

1. On the Layers palette, click in the empty box in front of the layer icon and name.
   A lock symbol should appear.

Groups

Grouping objects makes them temporarily behave as one object. If you do something to one element in a group, all the elements in the group will be affected.

To Group objects:

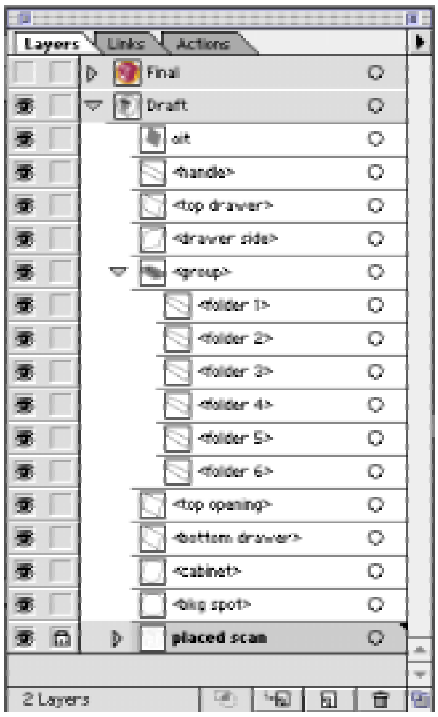
1. Shift-click with the Selection tool to select the elements you want to group.
2. Choose Object > Group (CONTROL + G).

To Ungroup objects:

1. Click on the group with the Select tool.
2. Choose Object > Ungroup (CONTROL + SHIFT + G).

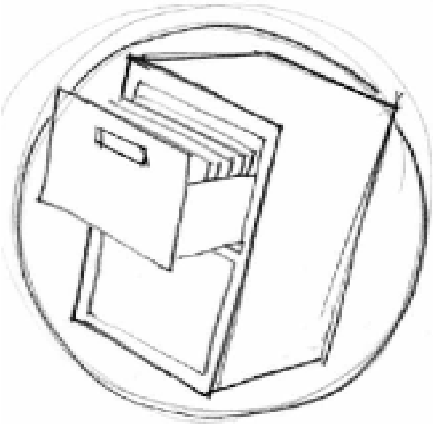
The elements can now be edited individually.

Exercise Three:
Analyze a completed design

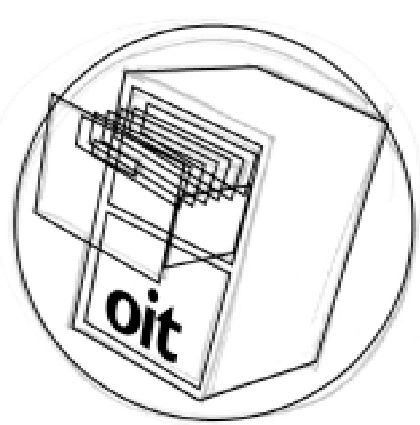


1. Open the Illustrator document called “model.ai”
2. When the document opens the layer called “Draft” should be visible, and the layer called “Finished” should be hidden.
   Note how the draft version was drawn as simple outlines—no fill, black stroke.
3. Click in the empty box in front of the “Final” layer, to take a quick look at the final product.
   Note how some shapes are outlines without fills, some shapes are fills without stokes, etc.
   After you’ve looked around, hide the “Finished” layer again.
4. If the “Draft” layer is not already open, listing the different objects on the layer, pop it open by clicking on the small arrow in front of the layer thumbnail.
5. Things to note:
   - The placed scan is at the bottom
   - Objects have been drawn from background to foreground.
     For instance the first object to draw in this example would be the big background spot, and the last, the handle on the front of the cabinet drawer.
     Before you start drawing, think about how shapes will cover each other
   - It is often useful to create a draft in simple outlines then fill shapes when the entire drawing is roughed out..
     Another option is to use the outline view: View > Preview. To return to the normal view of your artwork choose View > Preview.
   - Once the design is finished, it’s a good idea to convert text to outlines (Type > Create Outlines), so that the graphic can be used on any computer regardless of fonts.
     This is why the text layer from the draft shows as three separate <compound paths> in the final draft.

Placed scan



Draft over scan



Finished artwork