Adobe Illustrator Crash Course

Basics: Shape Creation and Editing

Overview

- You have read the Superbasics tutorial and are aware of how to navigate Illustrator.
  - Skills you should have: navigating AI, understanding of basic terminology (artboards, layers)
- We will now begin by creating a variety of shapes and paths to help you design your part.

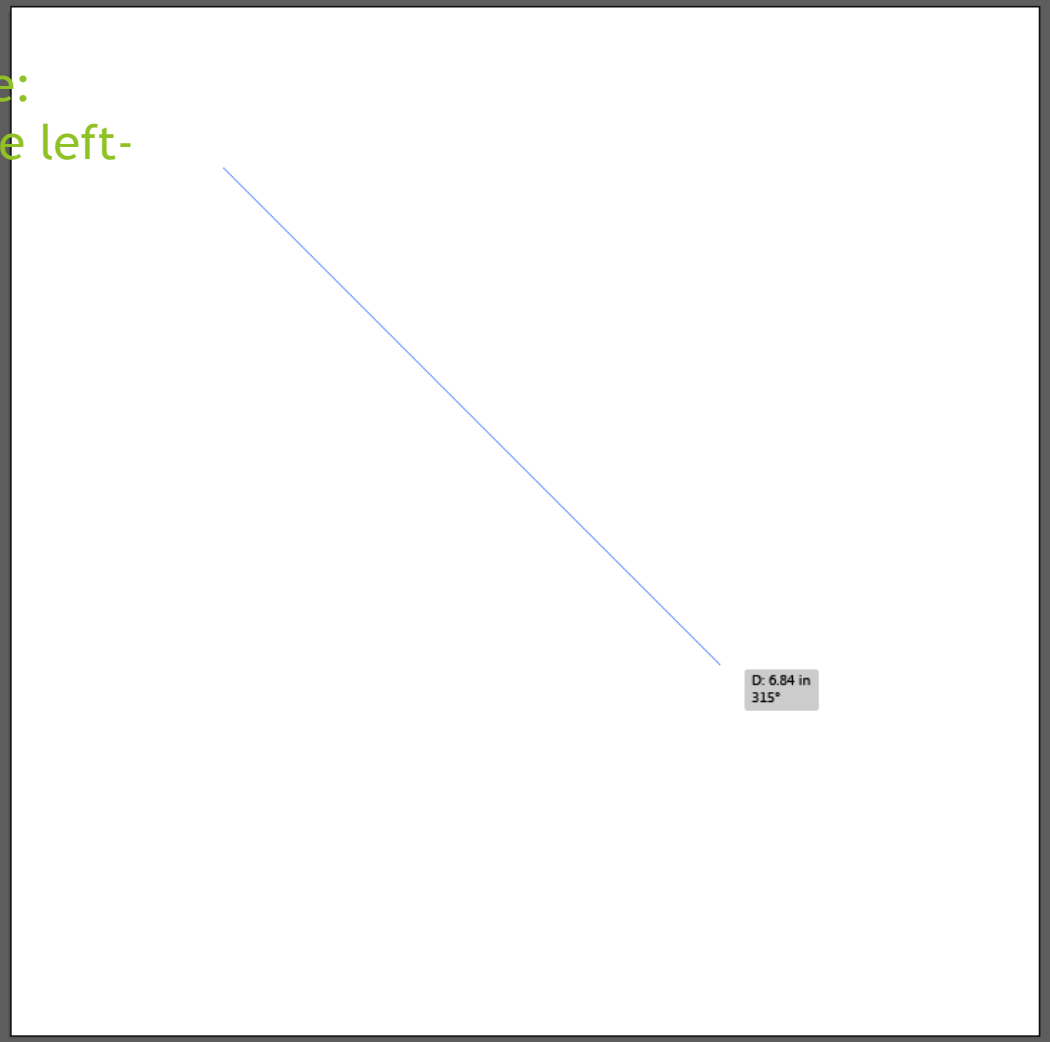
The Basics

- Shapes and Lines
- Selection
- Direct Selection
- Editing a Shape
- Shapebuilder

Lines

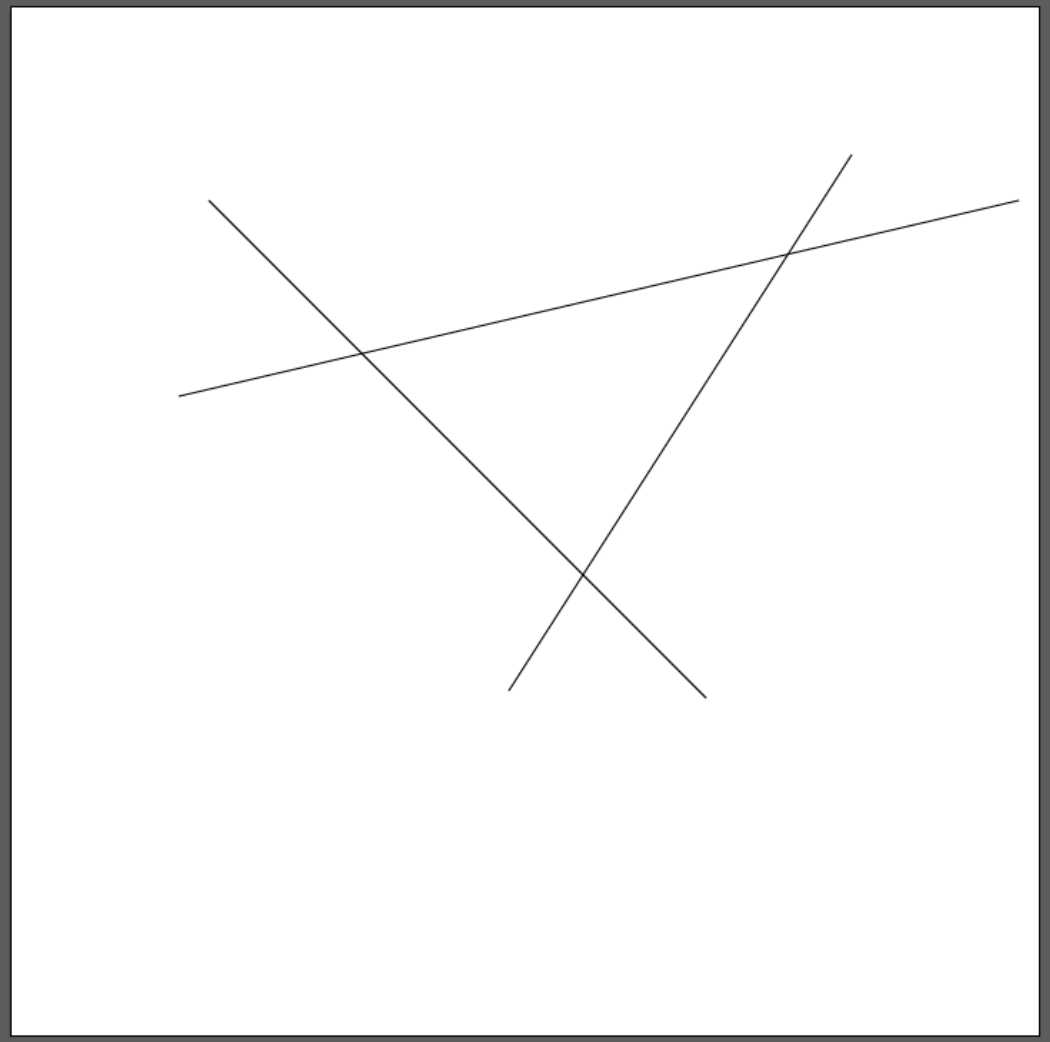
Let's start by making a line:

- Click the line tool on the left-hand toolbar
- Hotkey (backslash):\



Lines

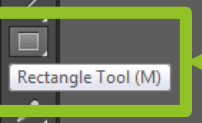
You can use the line tool to freely create lines, but they don't combine easily into shapes and aren't very useful to us at the moment. We'll come back to this in a bit.



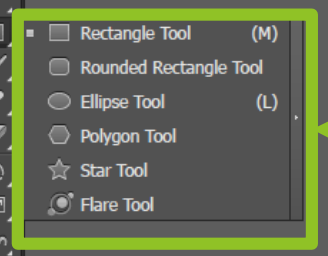
Shapes

Lines are cool, but let's make shapes:

- Click the rectangle tool on the left-hand toolbar
- Hotkey (rectangle): M



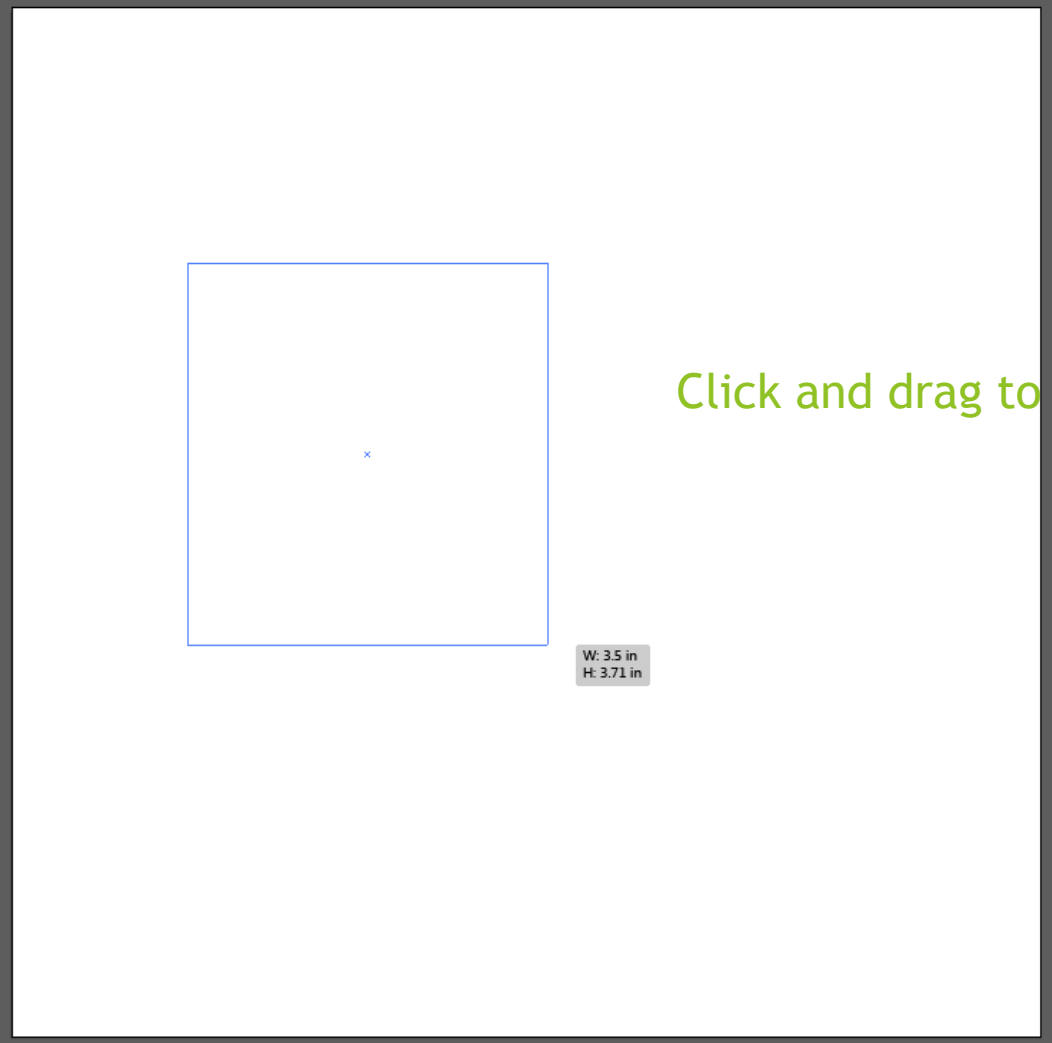
Shapes



You can also select different shapes by right-clicking the rectangle tool and clicking on a new shape.

- Hotkey (ellipse): L
  ^mnenomic: eLLipse

Shapes



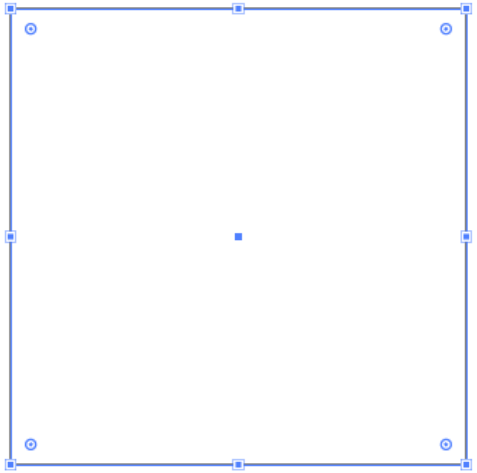
Click and drag to create a shape.

There are several tricks you can use when initially creating a shape to make your job faster.

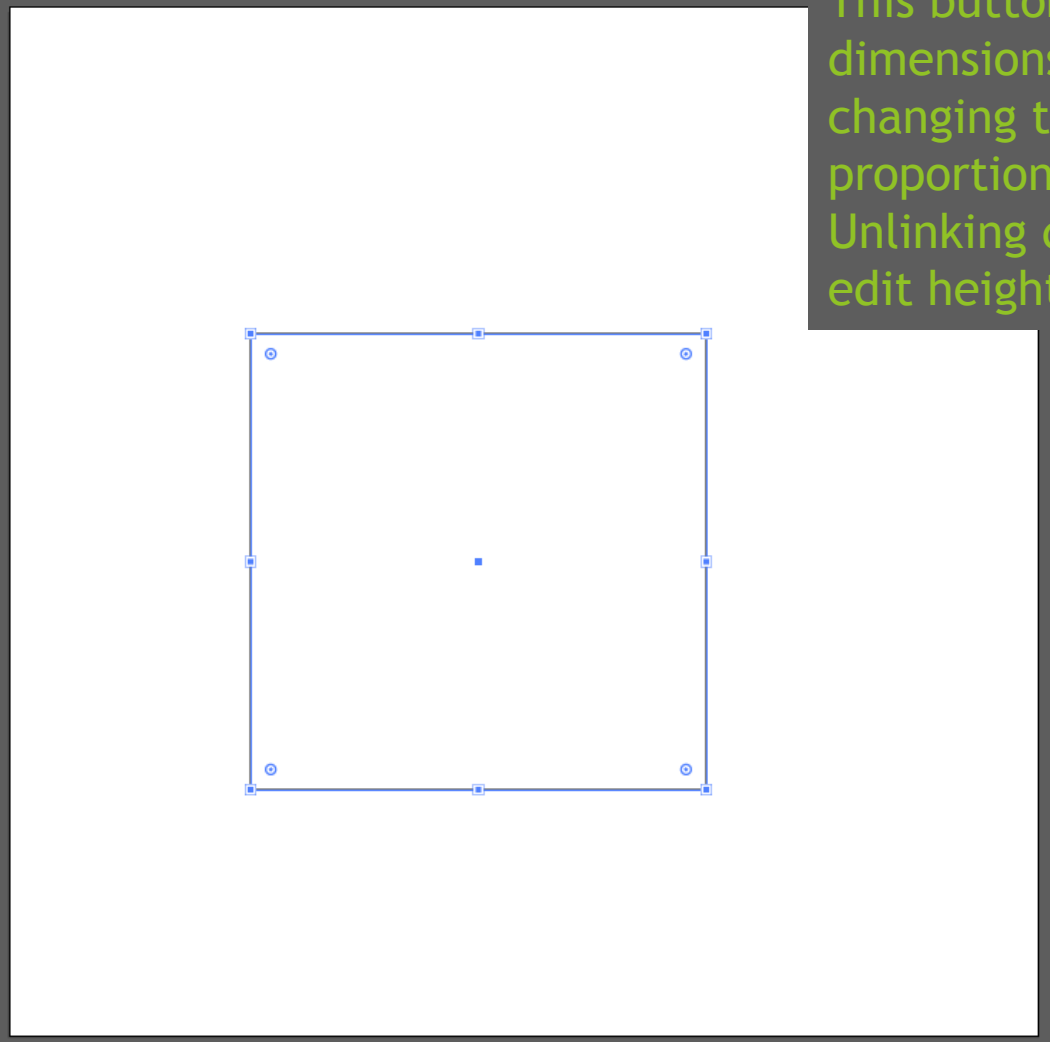
- Hotkey: **ALT-DRAG** (expand a shape about the center)
- Hotkey: **SHIFT-DRAG** (keep dimensions locked – creates squares or circles instead of rectangles or ellipses)

Shapes

After creating the shape, you can precisely alter its dimensions here.



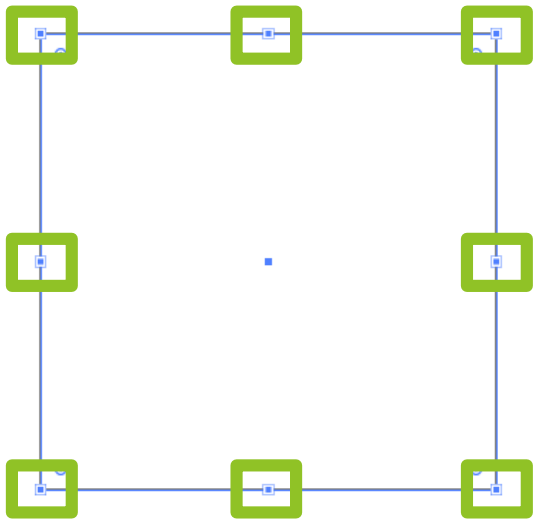
Shapes



This button links or unlinks shape dimensions. If you link dimensions, changing the height will proportionally change the width. Unlinking dimensions allows you to edit height and width individually.

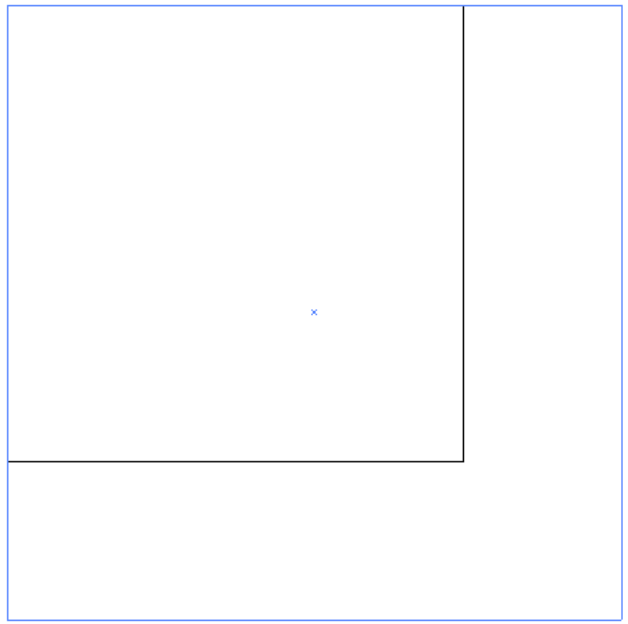
Shapes

Or you can freely resize it by using the corner/edge boxes:



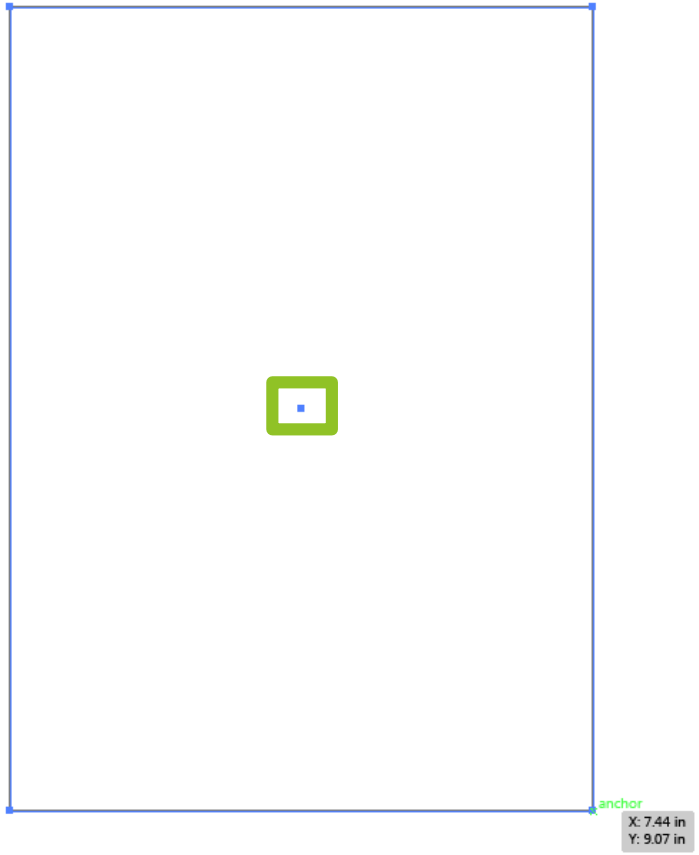
Shapes

When freely resizing, **SHIFT+DRAG** resizes while keeping dimension ratios locked,



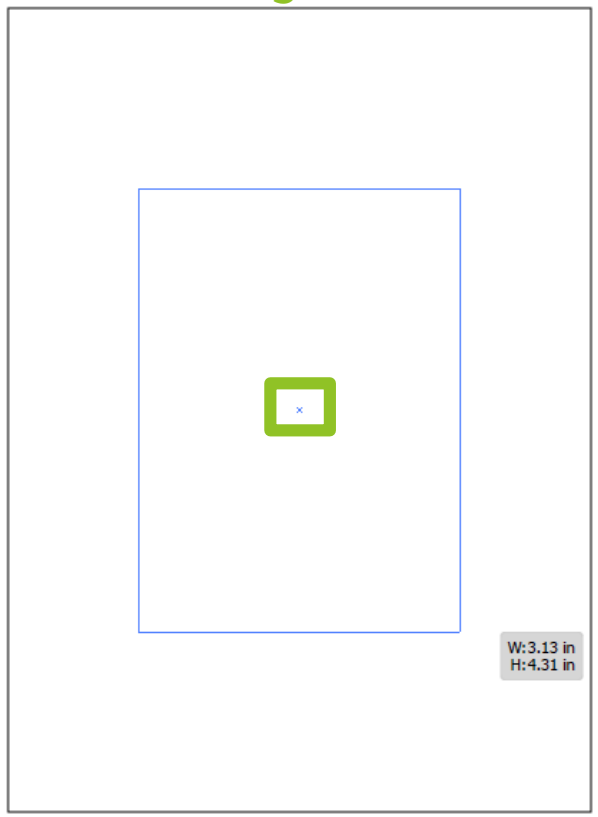
Shapes

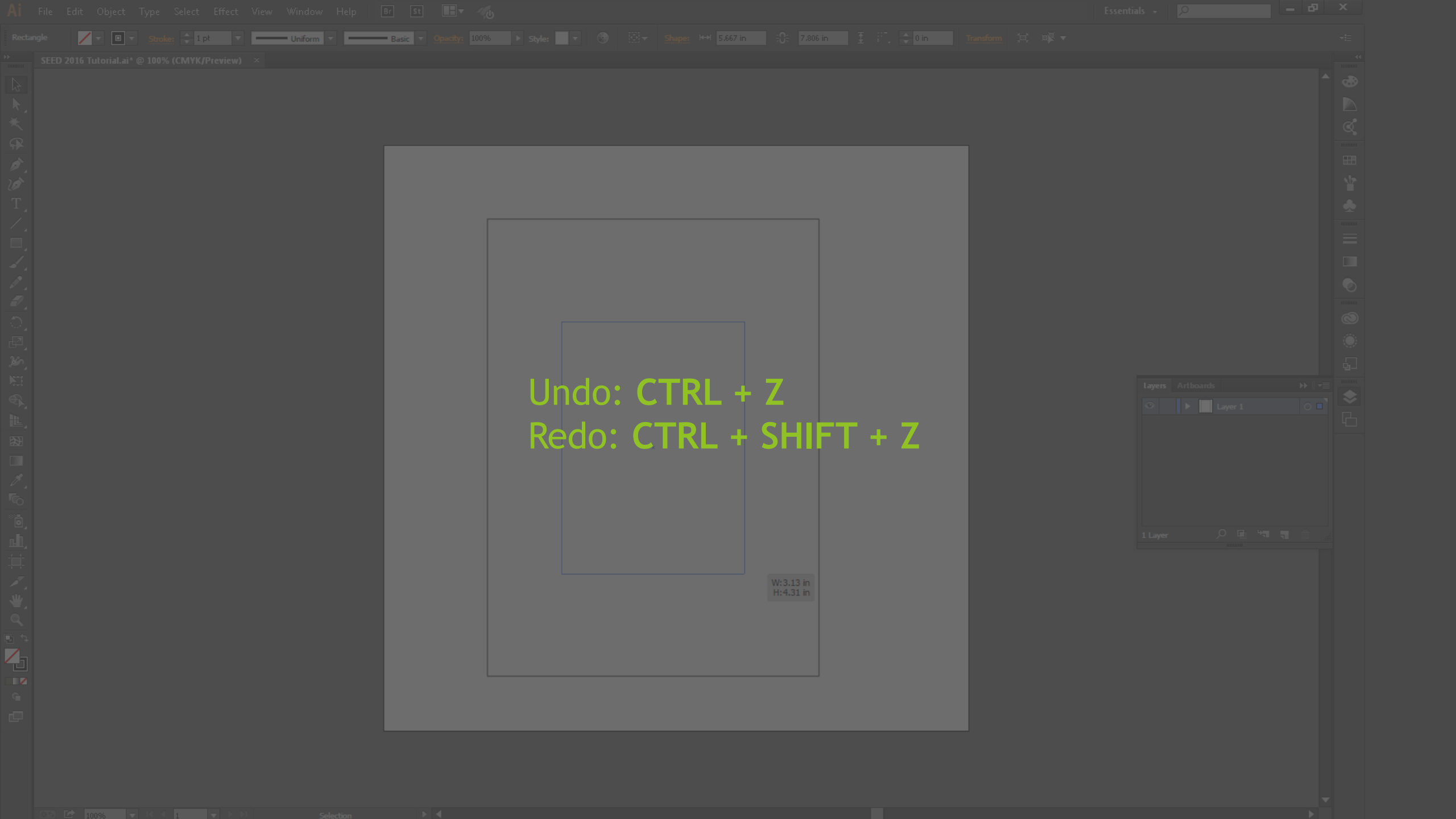
ALT+DRAG resizes with respect to the center point.



Shapes

and **SHIFT+ALT+DRAG** keeps dimension ratios locked while resizing about the center.

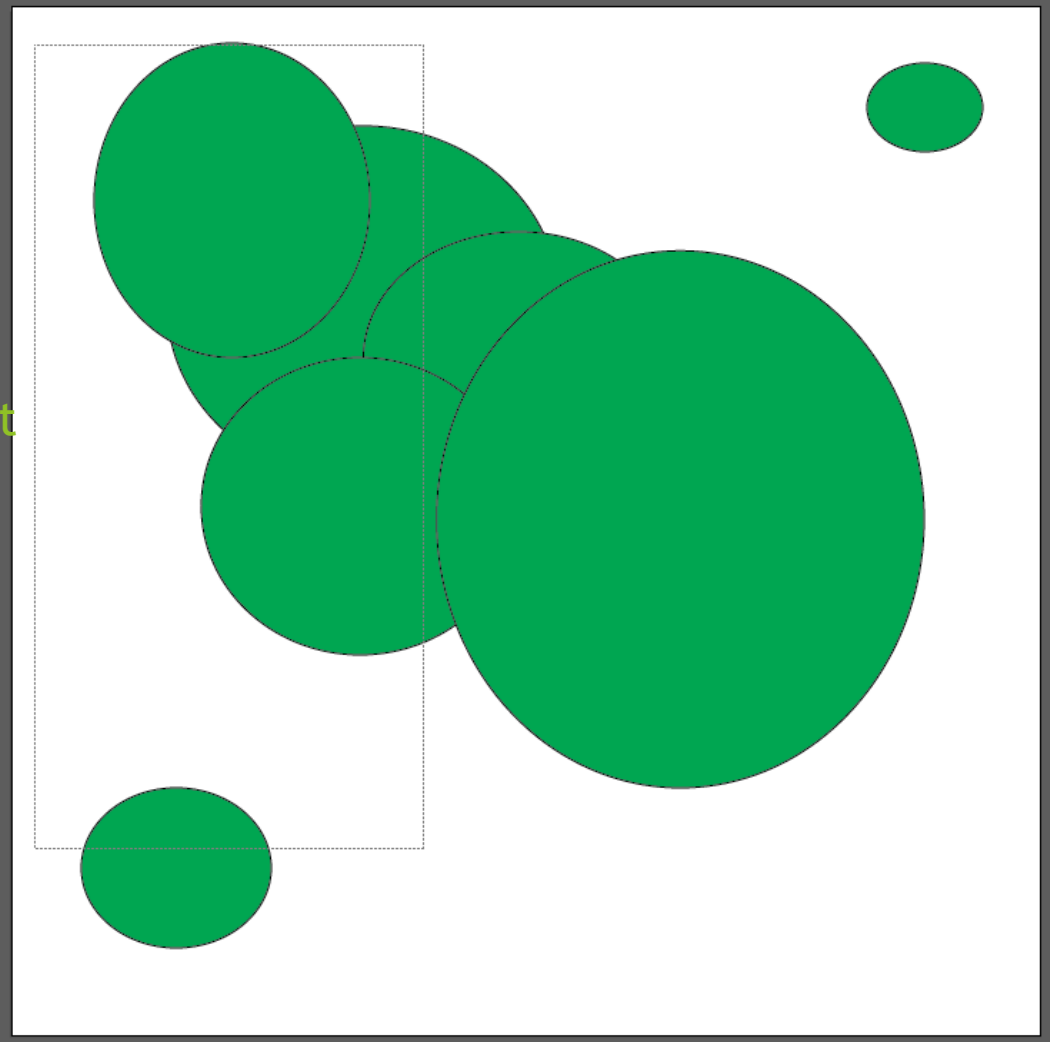



Undo: CTRL + Z
Redo: CTRL + SHIFT + Z

Selection

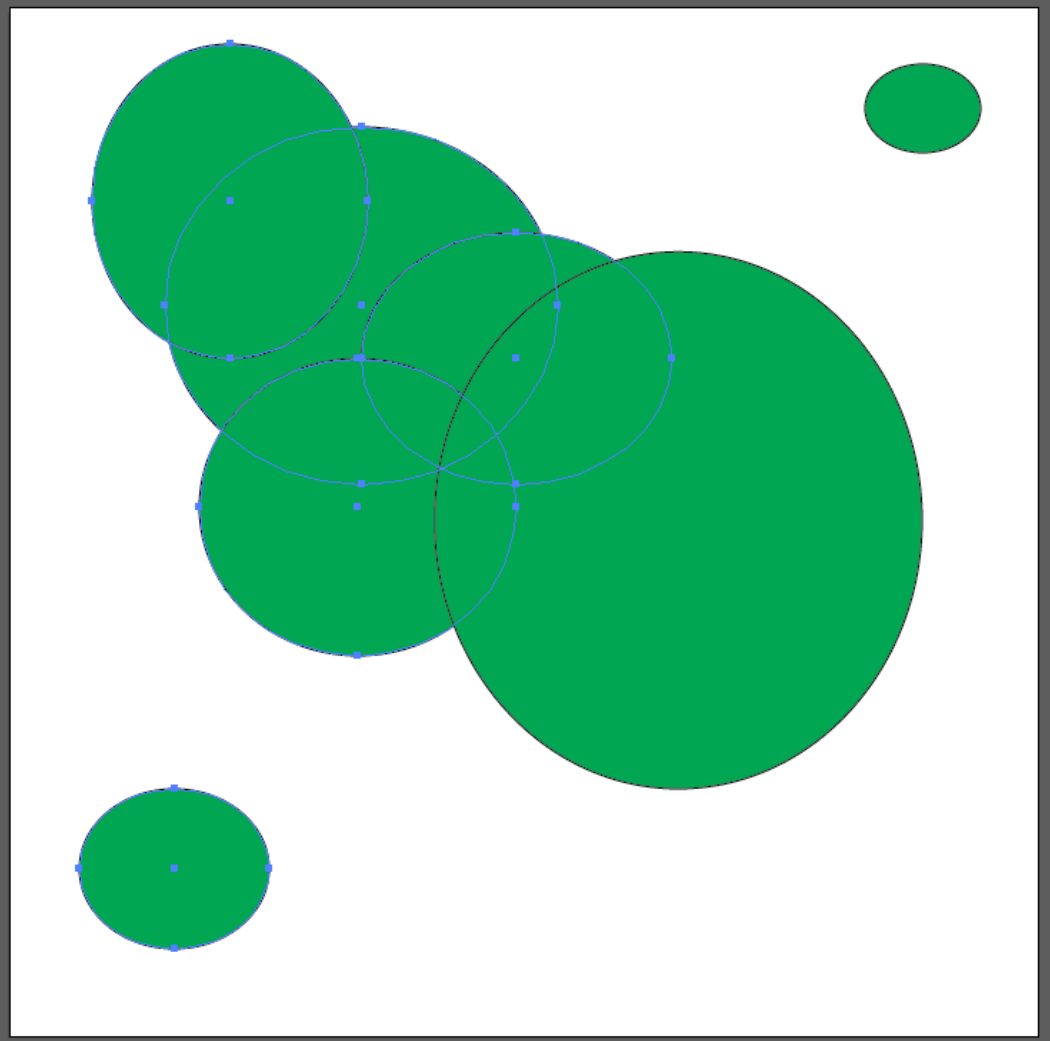
When either of these cursors is selected, click and drag to select objects. Illustrator counts any object that is partially within the selection window as under your selection.

Hotkey (Select All Objects in Layer): **CTRL+A**



Selection

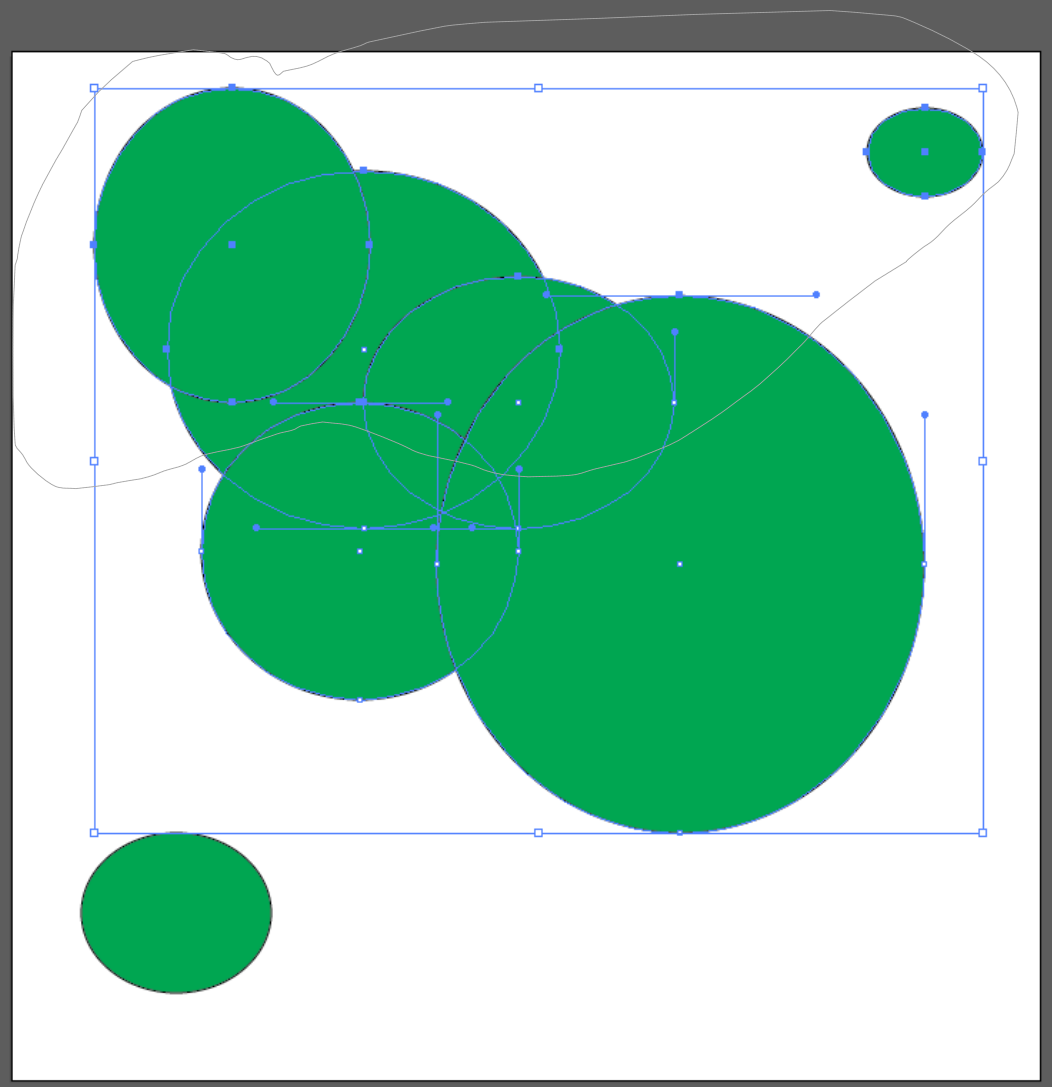
Or, **SHIFT+CLICK** to select multiple shapes at once.

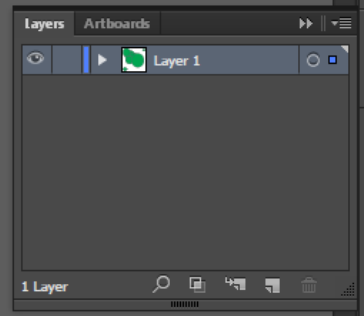


Selection

You can also use the Lasso Selection tool to create non-linear selection areas.

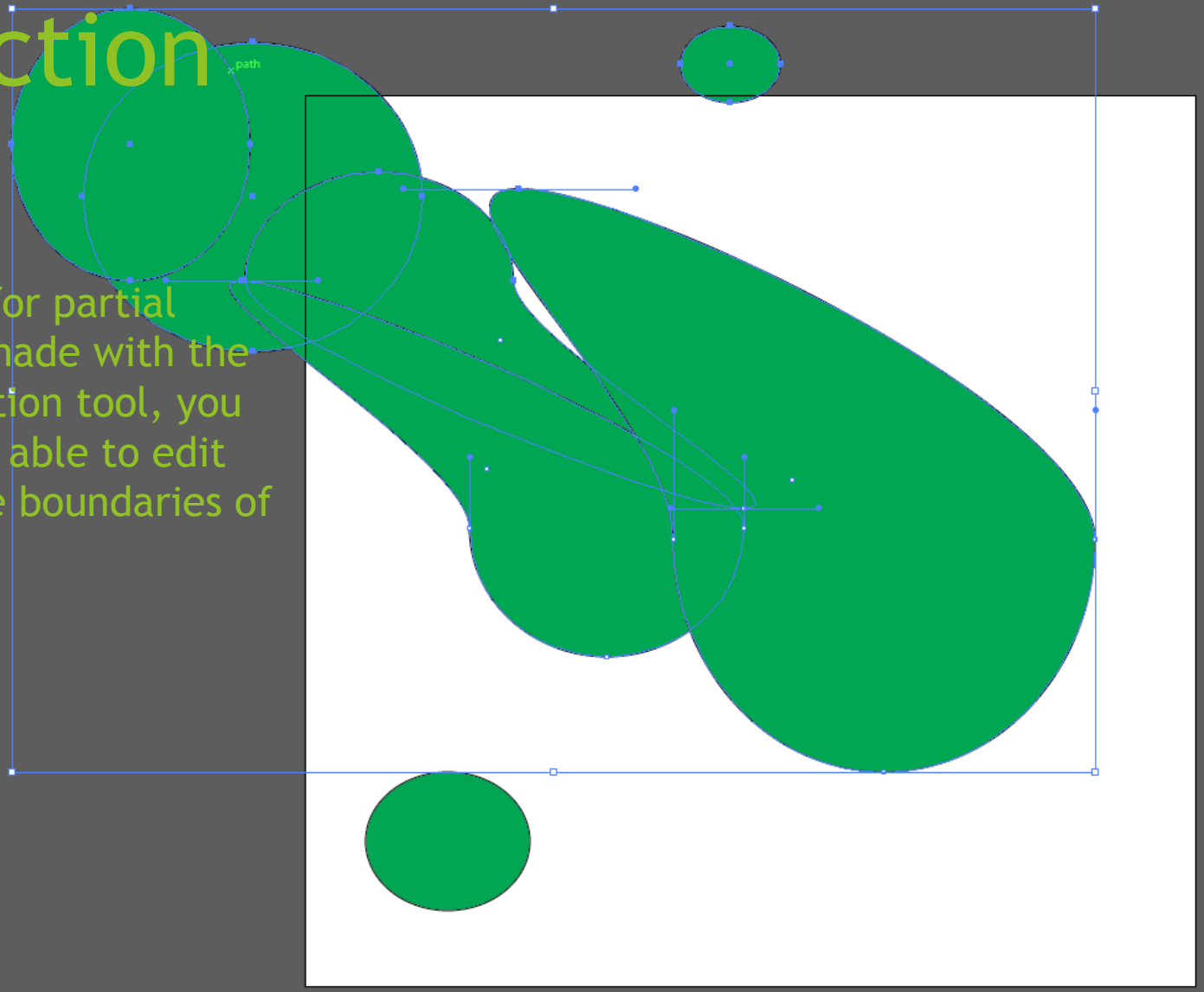
- Hotkey: Q





Selection

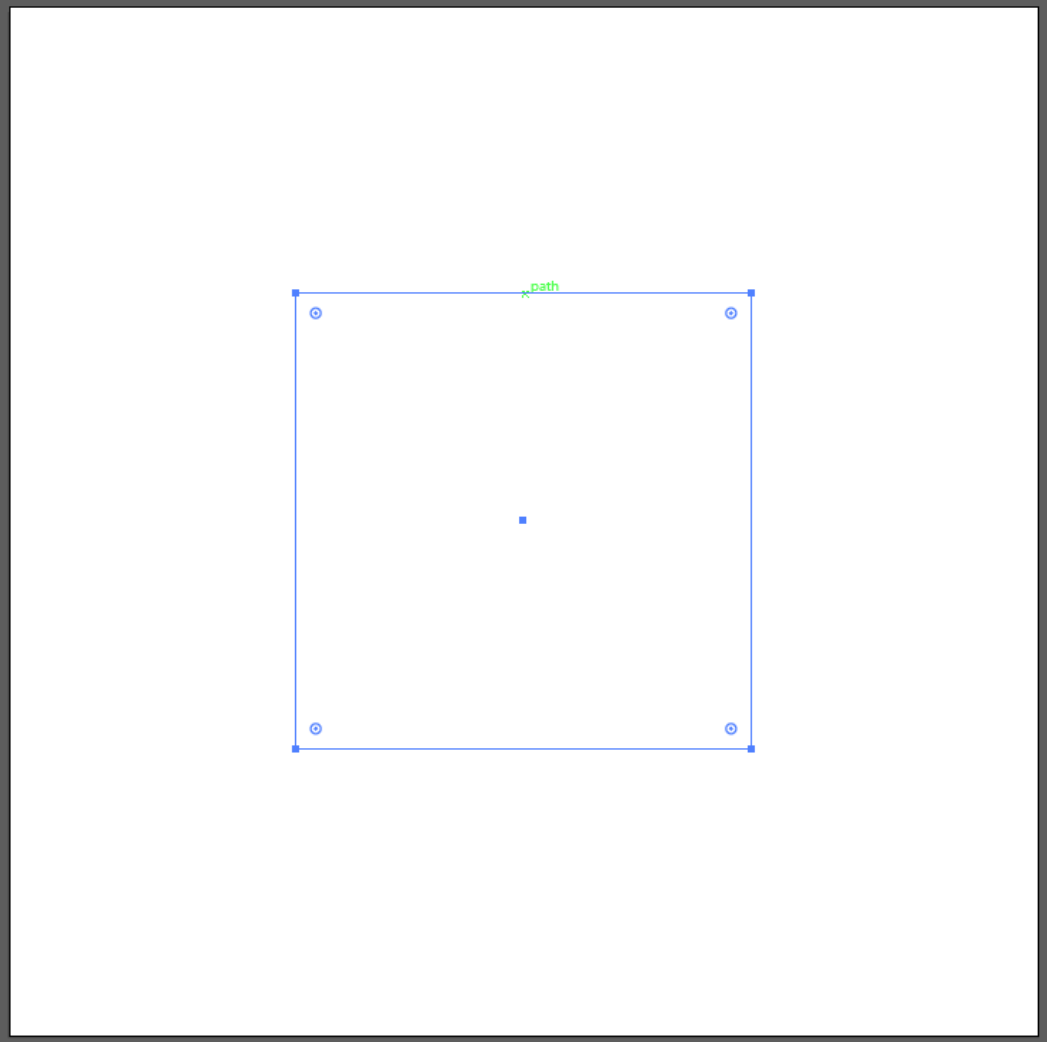
Note that, for partial selections made with the Lasso Selection tool, you will only be able to edit **some** of the boundaries of the shape.



Selection

There are two types of selection in Illustrator:

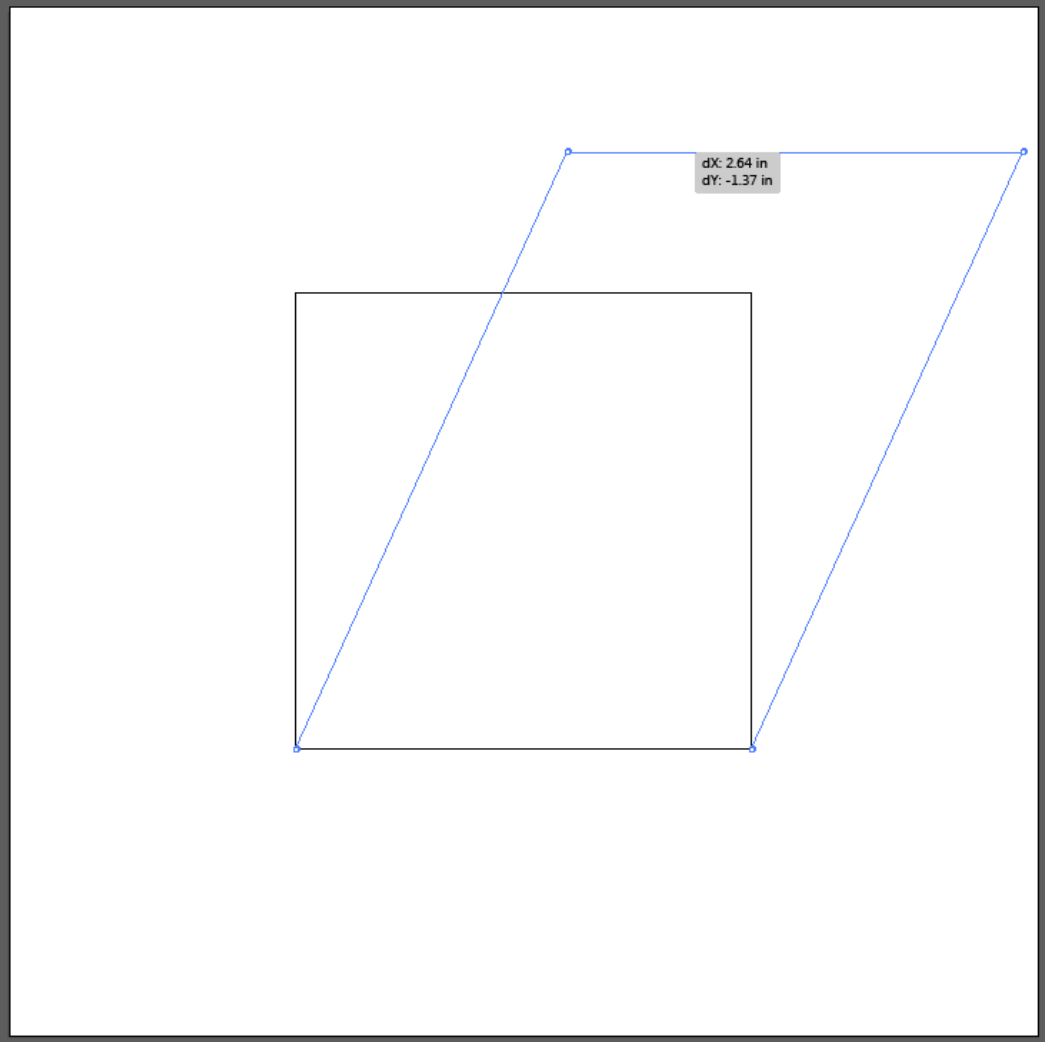
- **Select** (black mouse): allows you to select an entire shape and move it around. You can also resize it using the selection handles that appear
- Hotkey: **V**



Selection

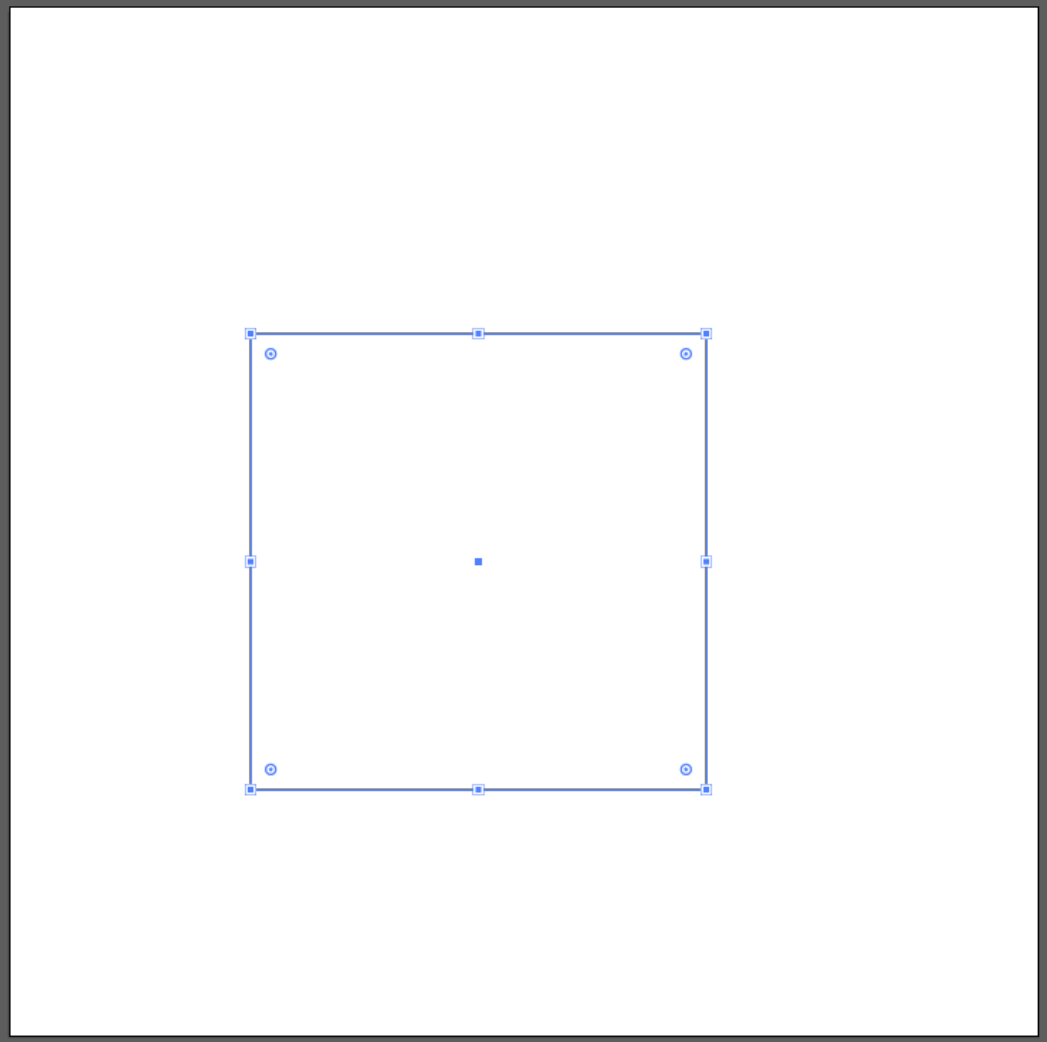
There are two types of selection in Illustrator:

- **Direct select** (white mouse): allows you to select individual pieces of a shape and move them freely
- Hotkey: **A**
- Note that this is the same kind of selection as Lasso Selection



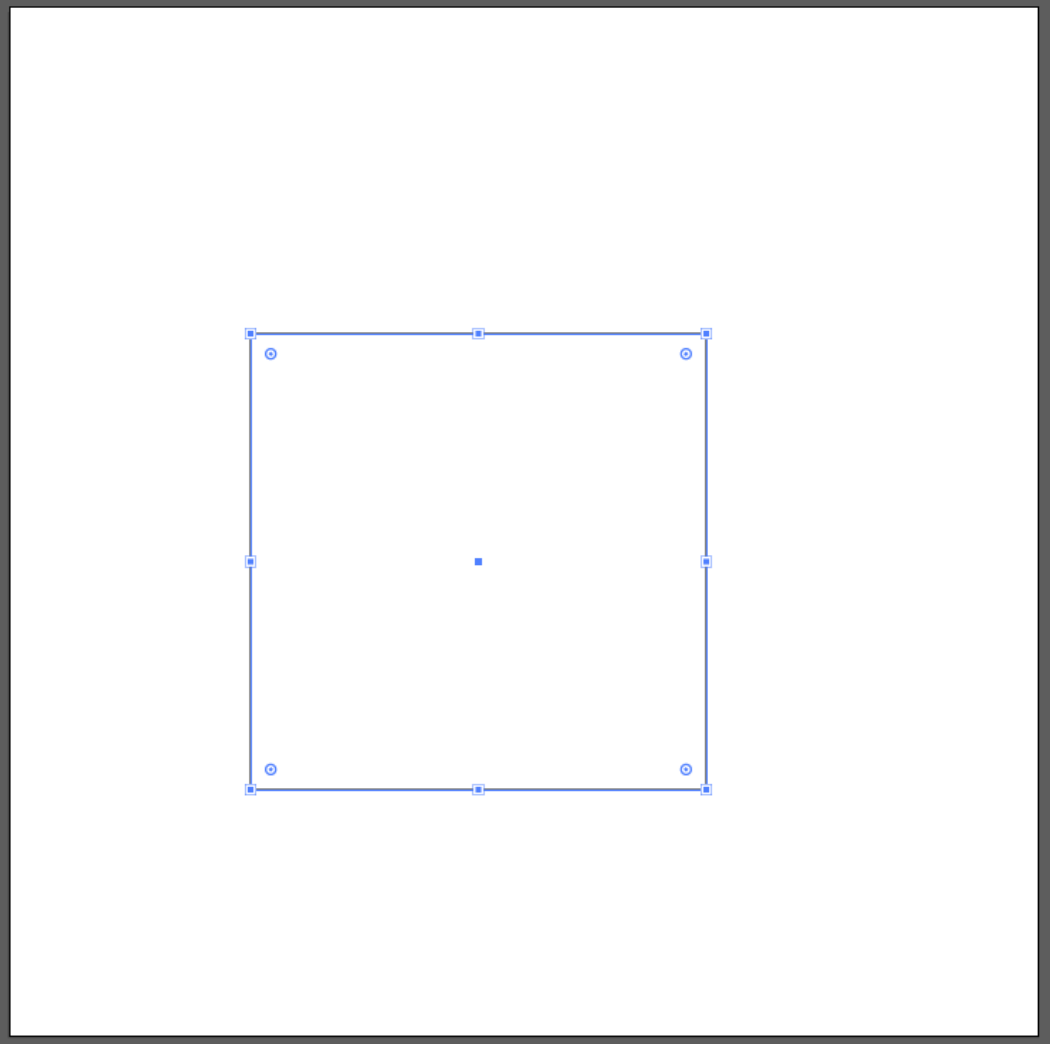
You can alter Fill, Stroke, and Weight (respectively) here:

- Fill: the color of the interior of a shape
- Stroke: the the outline of a shape
- Weight: the thickness of the shape's outline



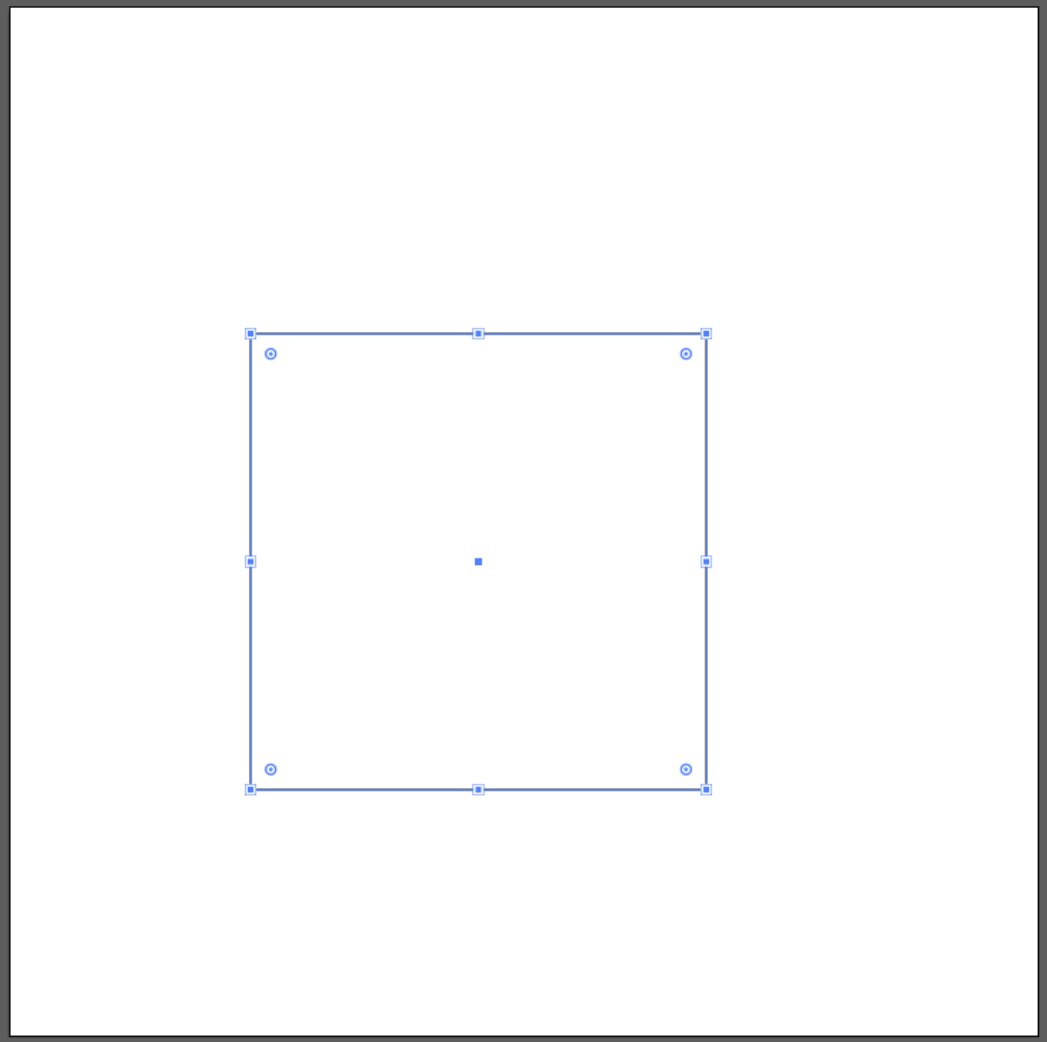
Fill has one major property:

- Color: this determines the color of the shape. For most lasercut pieces, you'll want to work with the no-fill option, shown above.

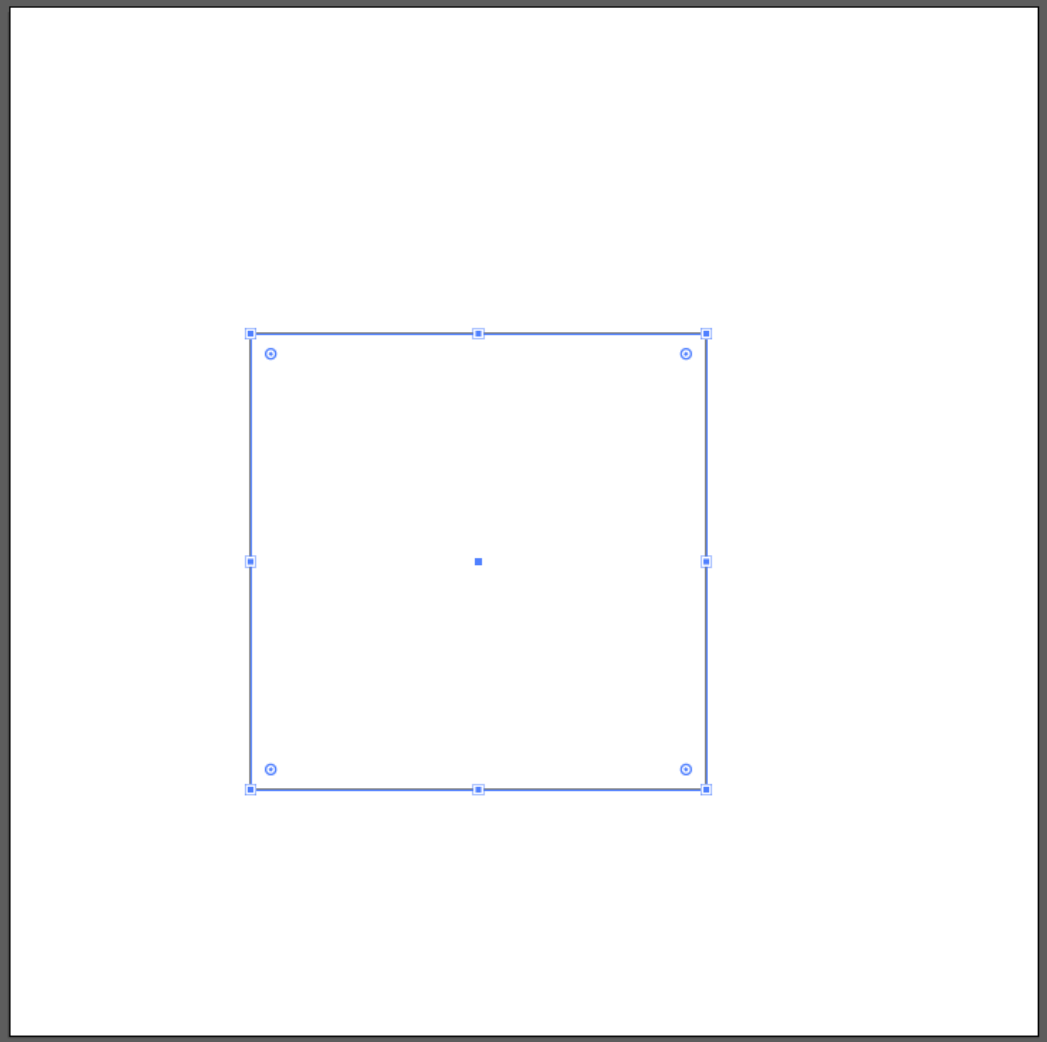


Stroke has two major properties:

- **Color**: this determines the color of the line
- **Weight**: this determines the width of the line

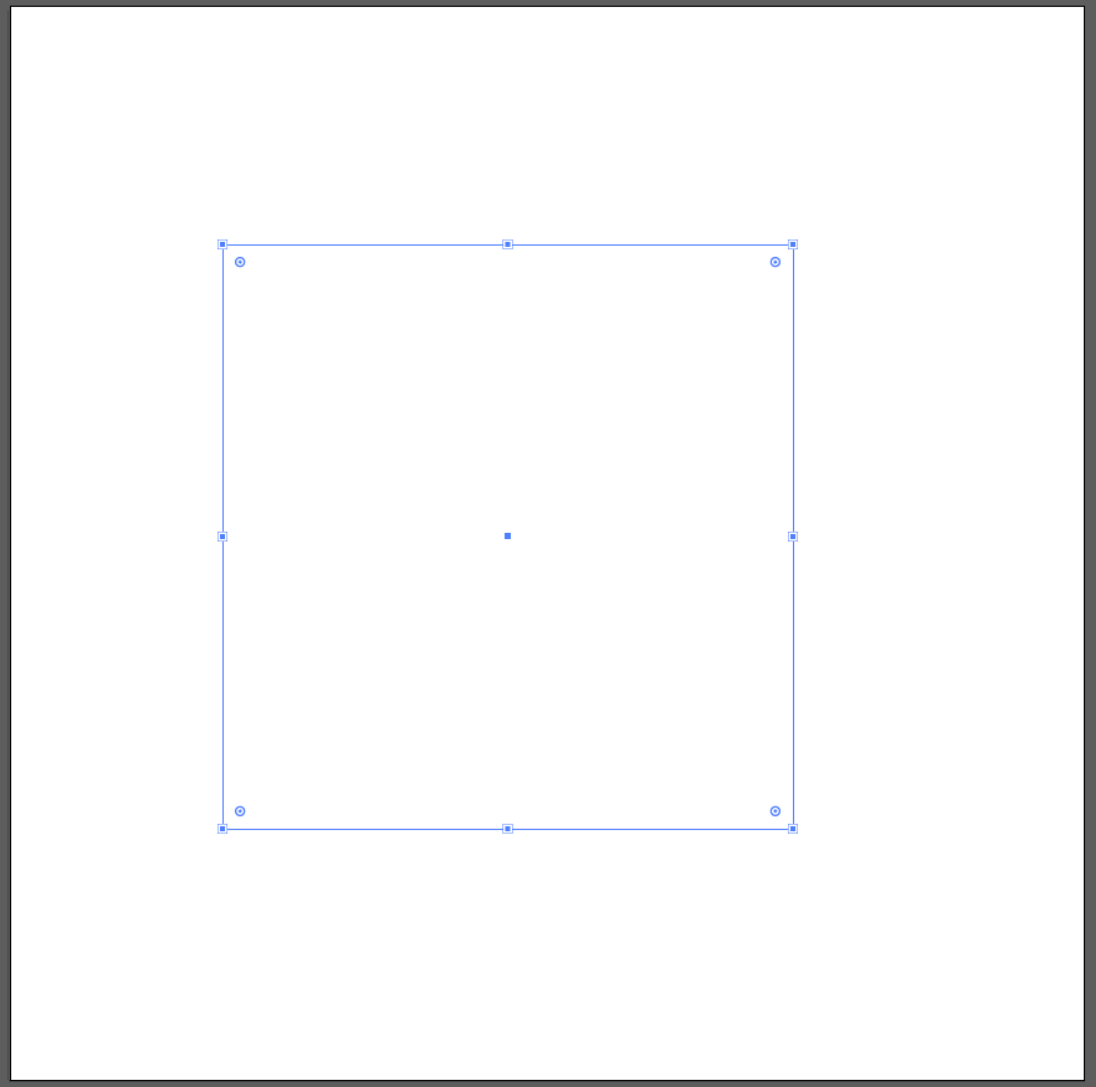


- Don’t focus on these too much in the designing process: use what feels comfortable for you, but be aware that you’ll need to convert your line thicknesses when cutting (we’ll talk more about this later)



When your file is ready to cut, convert to:

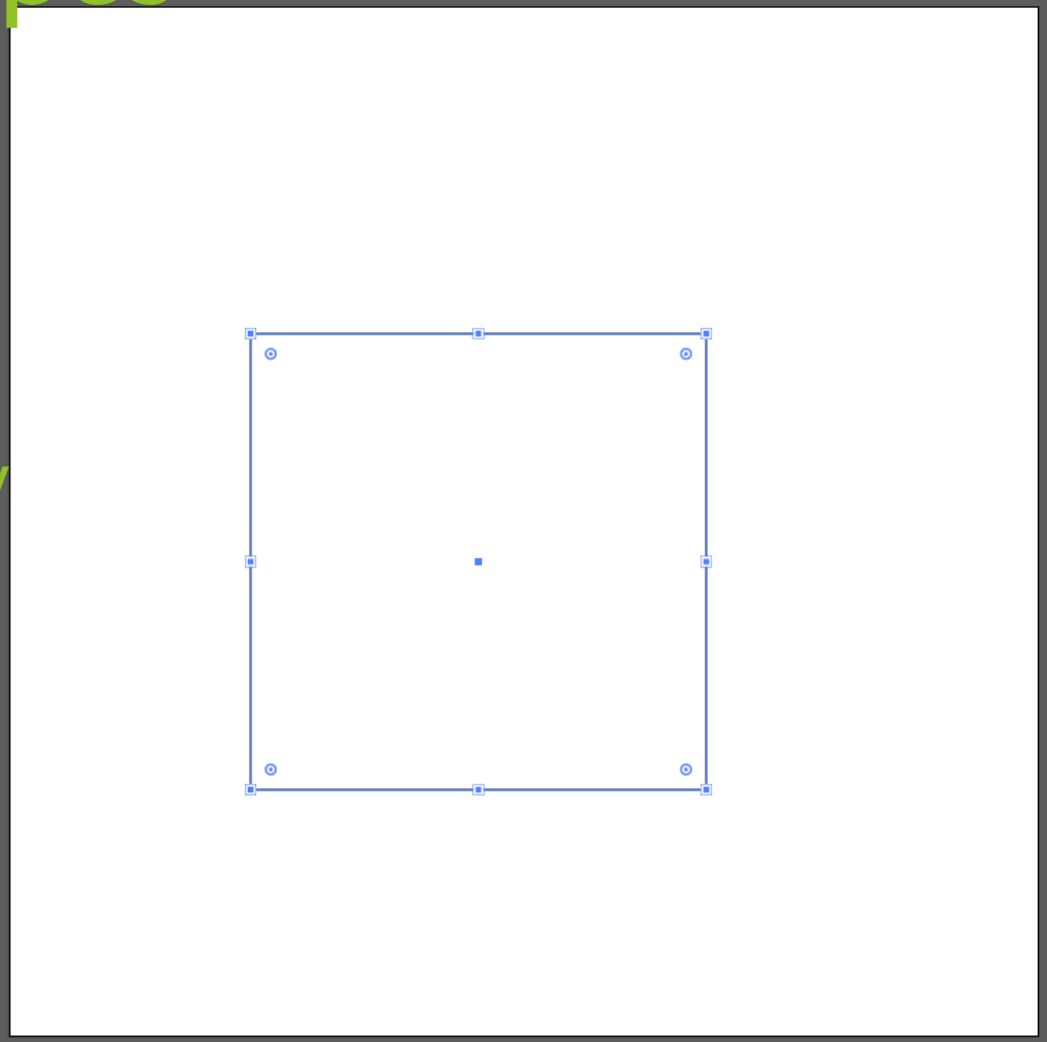
- **NO FILL** (indicated by the white square with a red line through the center)
- Stroke (any color) that is **.001 in** thick.
  - You can specify the stroke thickness to inches regardless of the native units of your document(ie a document in pts will automatically convert you to .0072 pts).



Editing Shapes

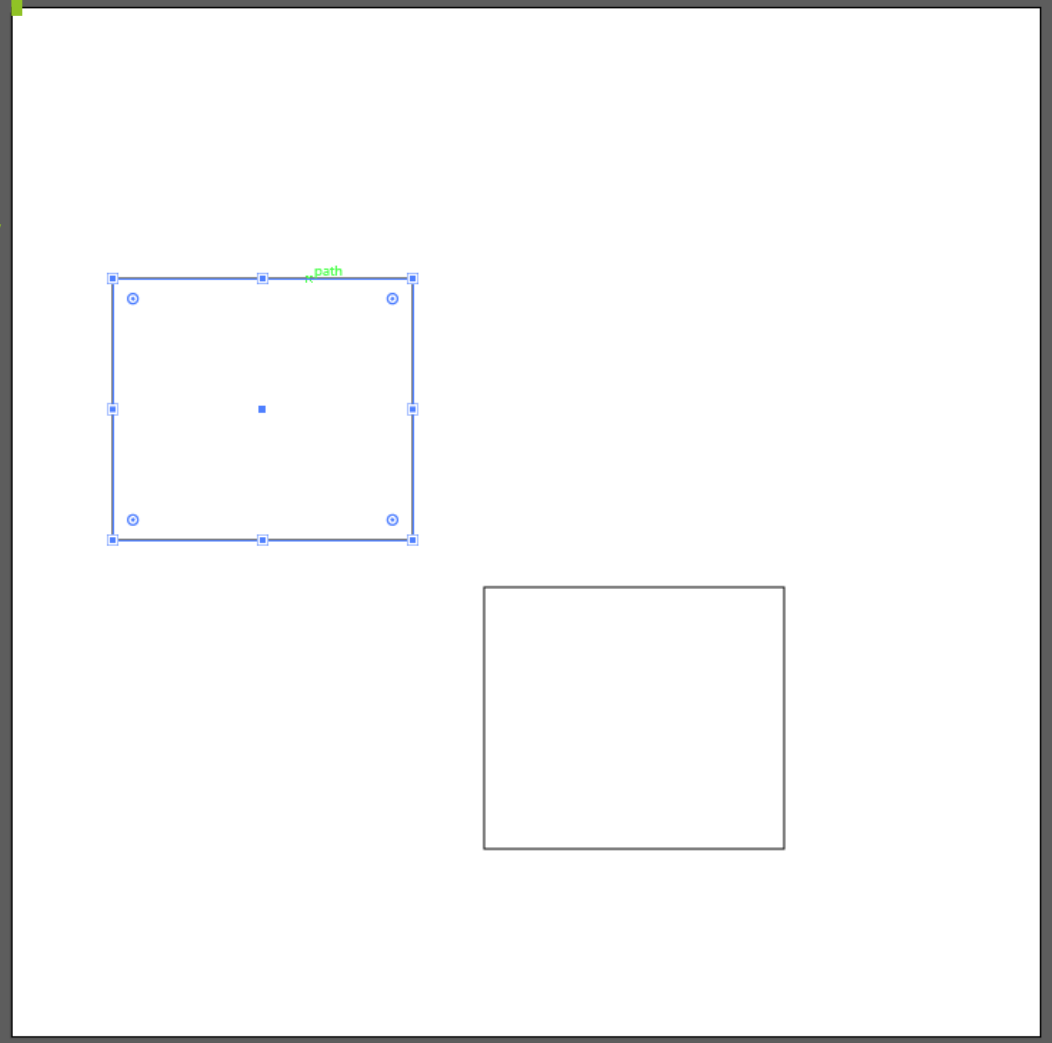
You can also copy/paste shapes using traditional hotkeys:

- Hotkey (copy): CTRL + C
- Hotkey (paste): CTRL + V
- Hotkey (cut): CTRL + X



Editing Shapes

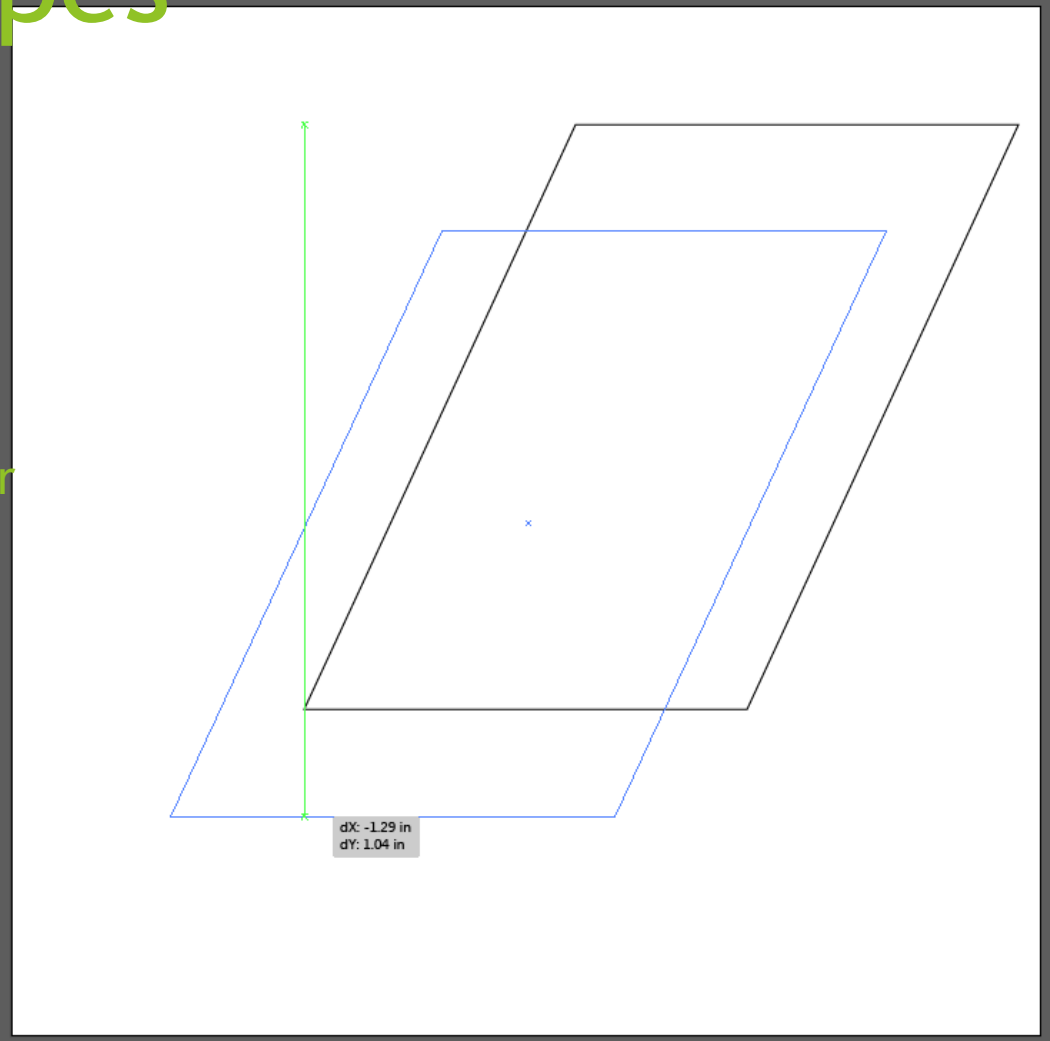
ALT+DRAG places a copy of the shape in the location that you drag your mouse.



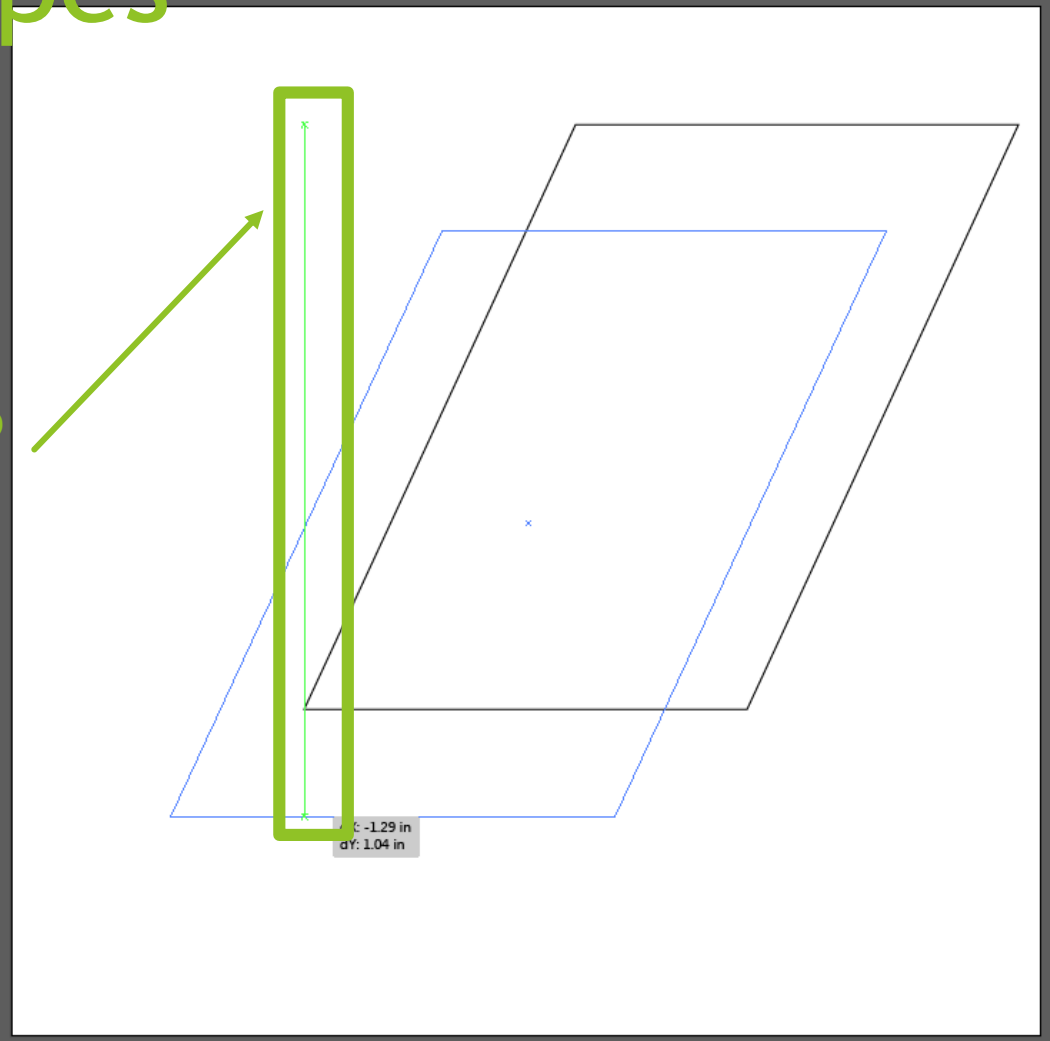
Editing Shapes

Move shapes by clicking and dragging on their outlines.

SHIFT+DRAG constrains your movement to a single axis (only drag horizontally/vertically)

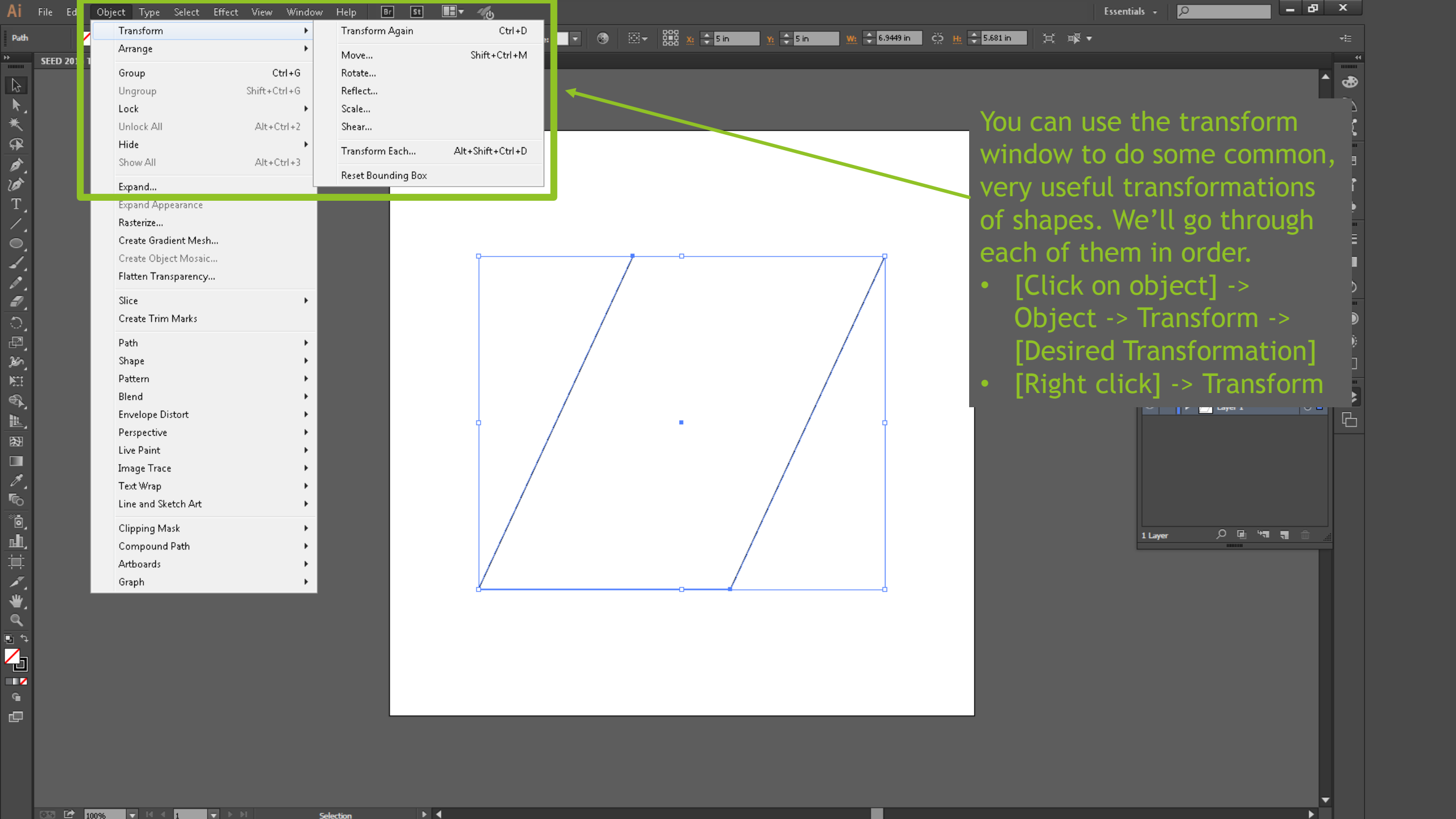


Editing Shapes



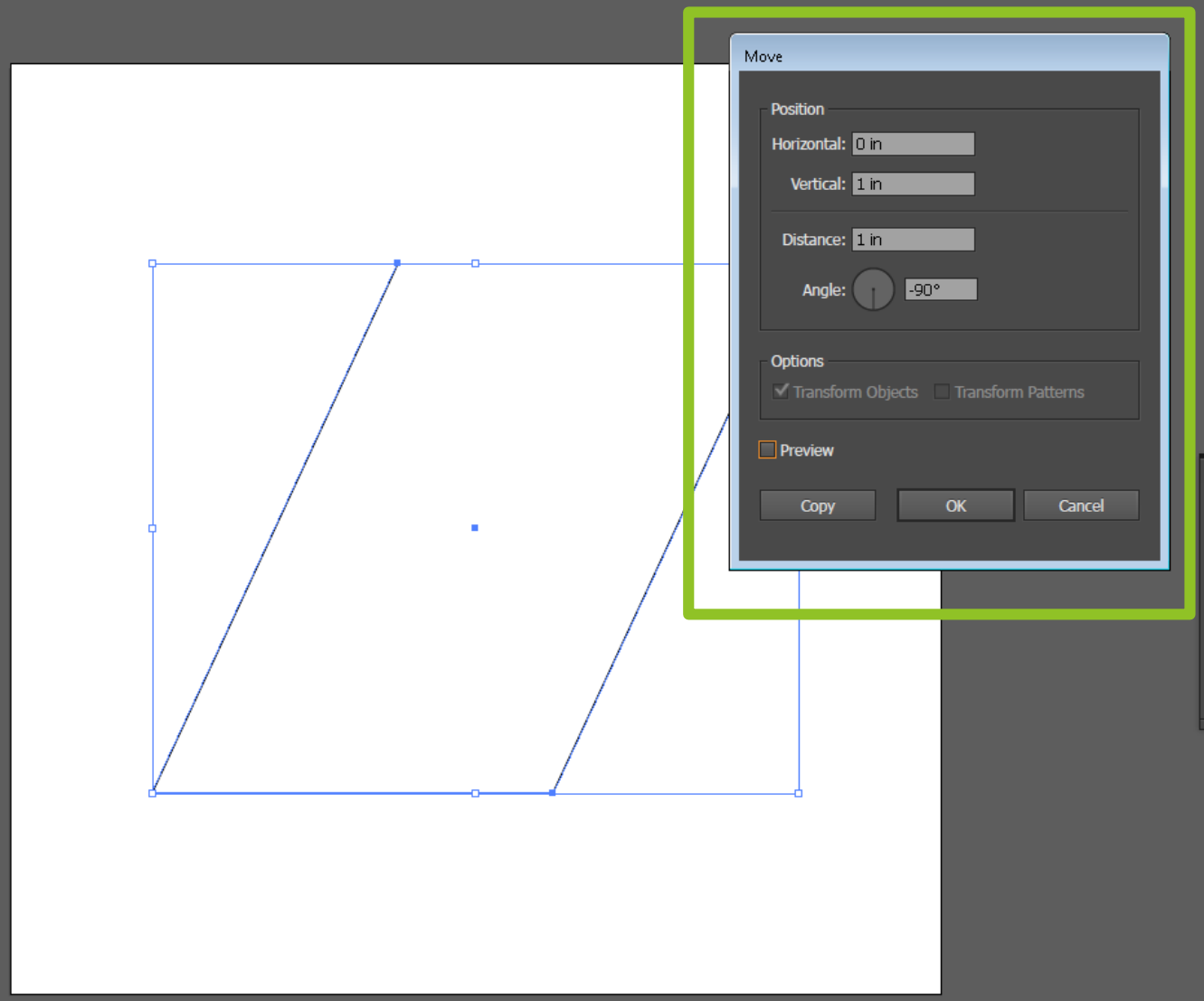
The bright green lines you see are called SmartGuides. They allow you to auto-snap onto relevant features of other shapes (centers, edges, and corners).

If you're tired of all the green lines or you want to know where they went, **CTRL + U** toggles SmartGuides on/off.


Object
Type
Select
Effect
View
Window
Help
Transform
Arrange
Group Ctrl+G
Ungroup Shift+Ctrl+G
Lock
Unlock All Alt+Ctrl+2
Hide
Show All Alt+Ctrl+3
Expand...
Expand Appearance
Rasterize...
Create Gradient Mesh...
Create Object Mosaic...
Flatten Transparency...
Slice
Create Trim Marks
Path
Shape
Pattern
Blend
Envelope Distort
Perspective
Live Paint
Image Trace
Text Wrap
Line and Sketch Art
Clipping Mask
Compound Path
Artboards
Graph
Transform Again Ctrl+D
Move... Shift+Ctrl+M
Rotate...
Reflect...
Scale...
Shear...
Transform Each... Alt+Shift+Ctrl+D
Reset Bounding Box
You can use the transform window to do some common, very useful transformations of shapes. We'll go through each of them in order.
• [Click on object] -> Object -> Transform -> [Desired Transformation]
• [Right click] -> Transform
1 Layer

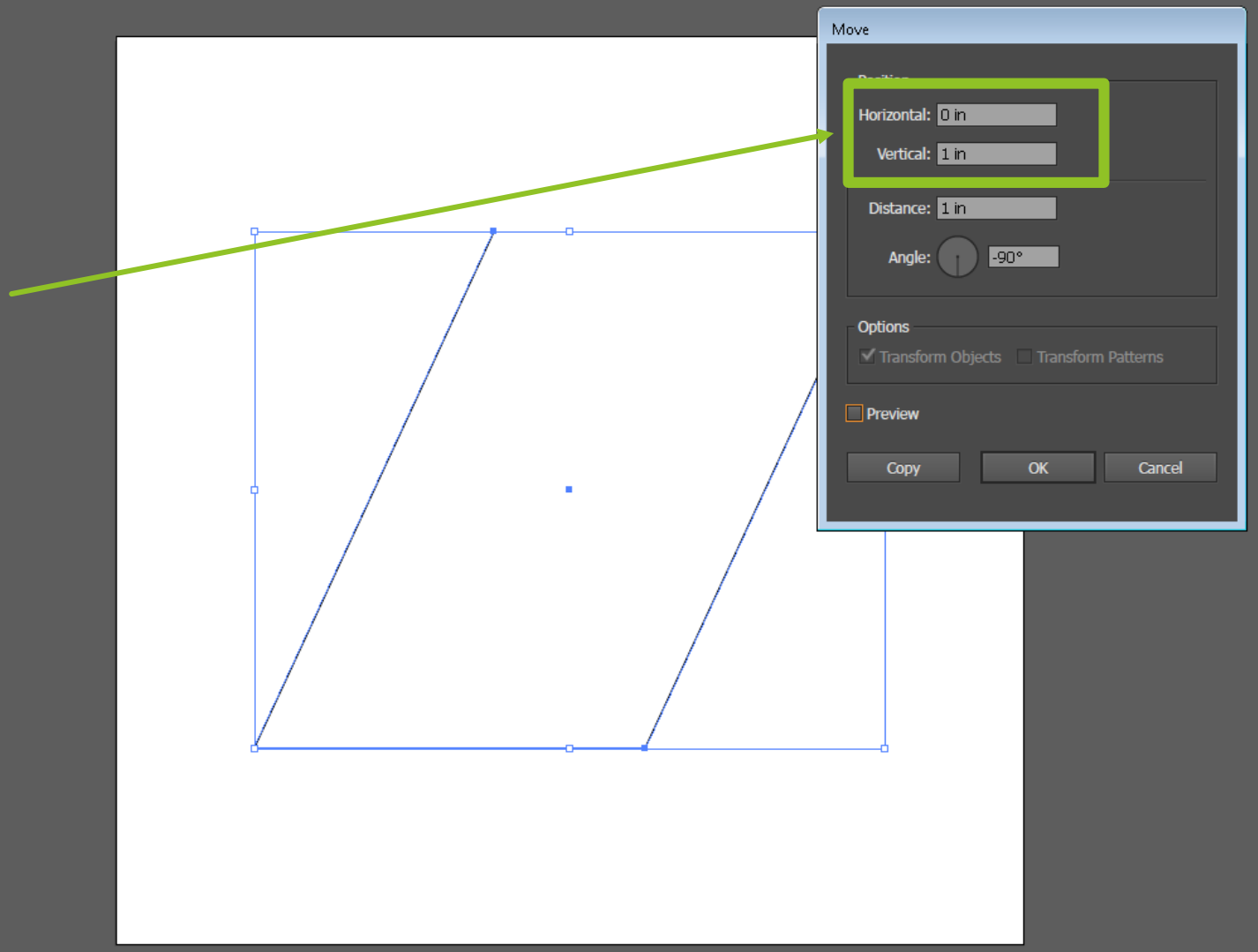
Move

"Move" offers a more precise version of clicking and dragging a shape around the workspace.



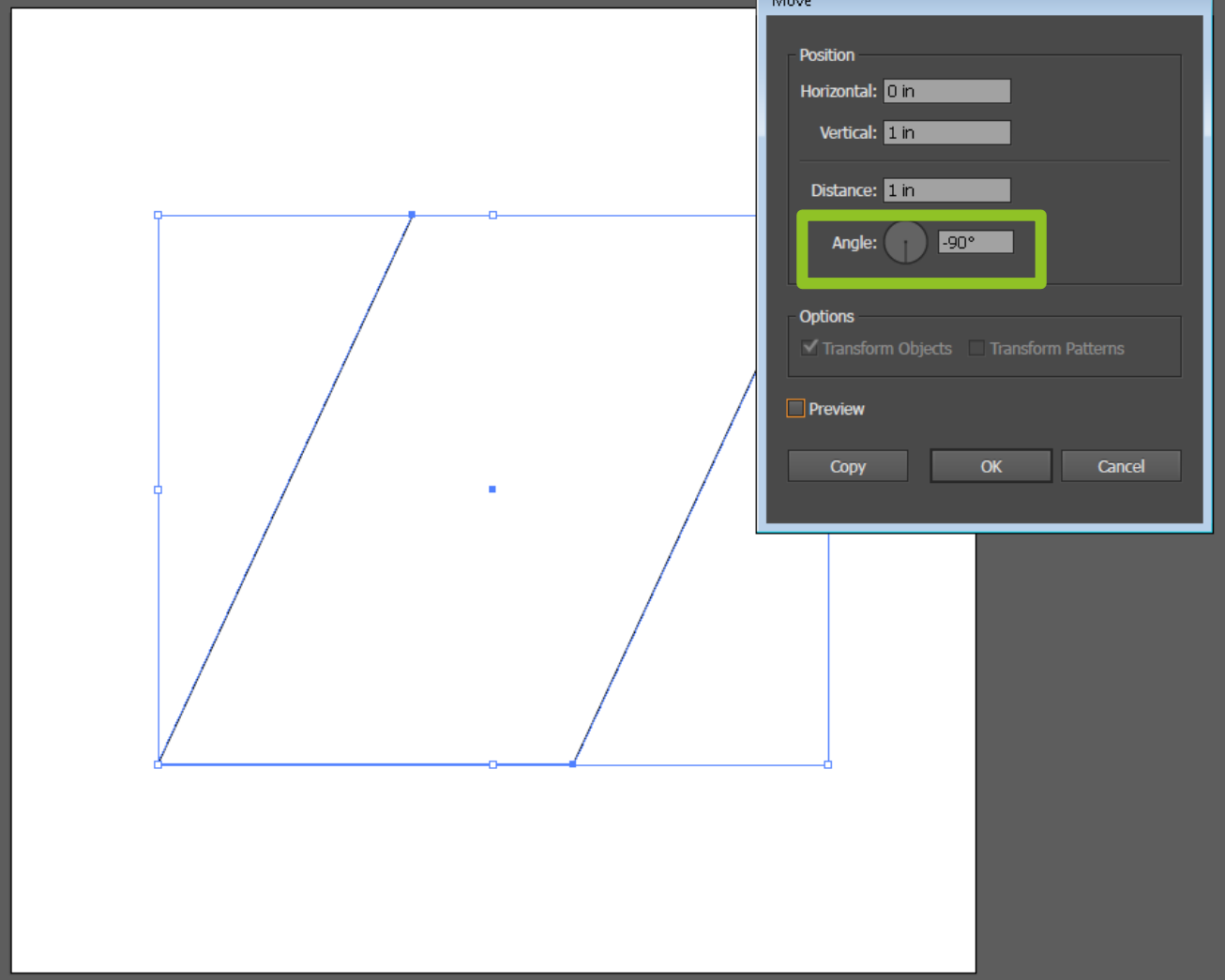
Move

You can control the horizontal/vertical displacements of the shape in this window.



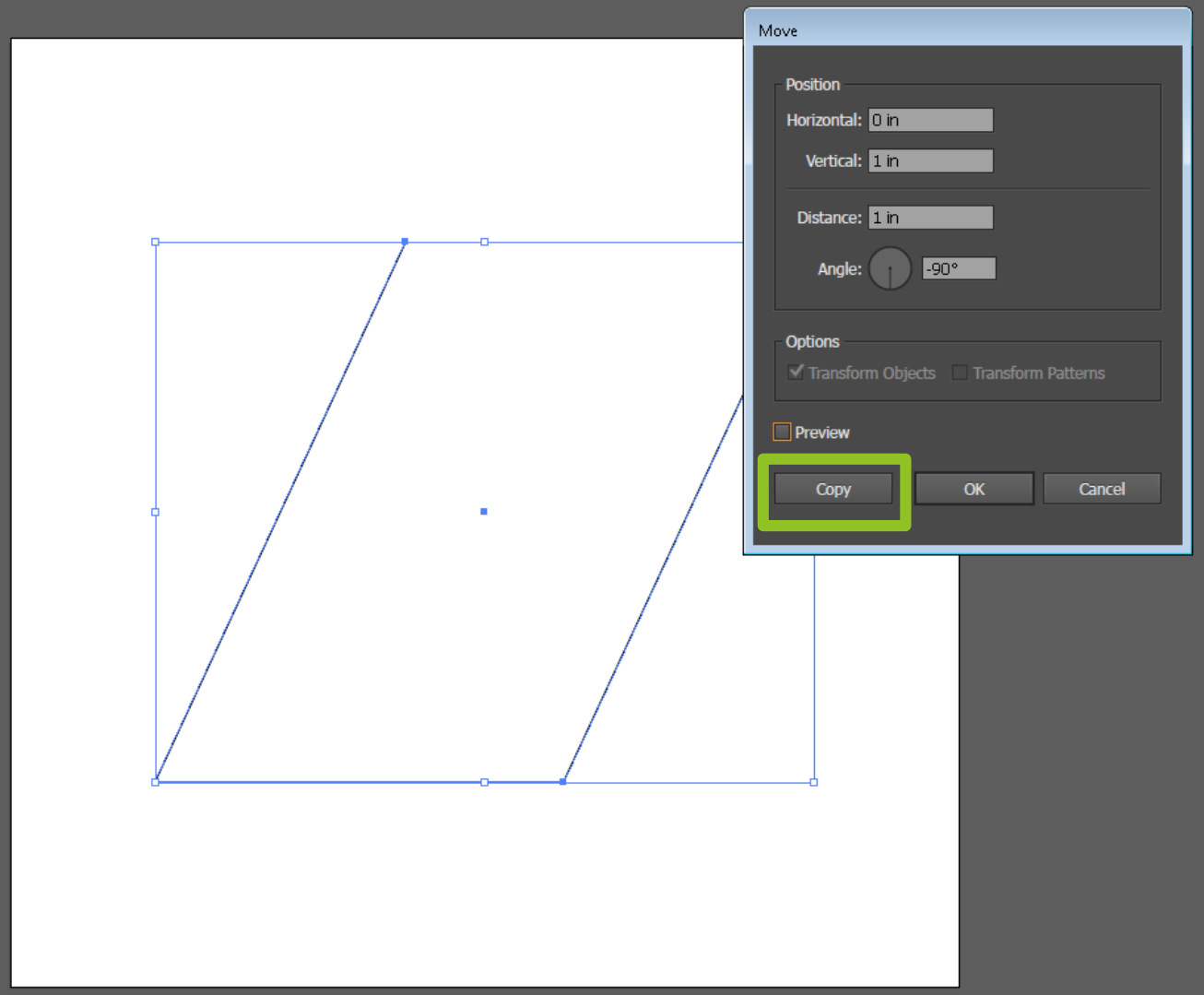
Move

If you get confused about where the shape will go, this line is points in the right direction.



Move

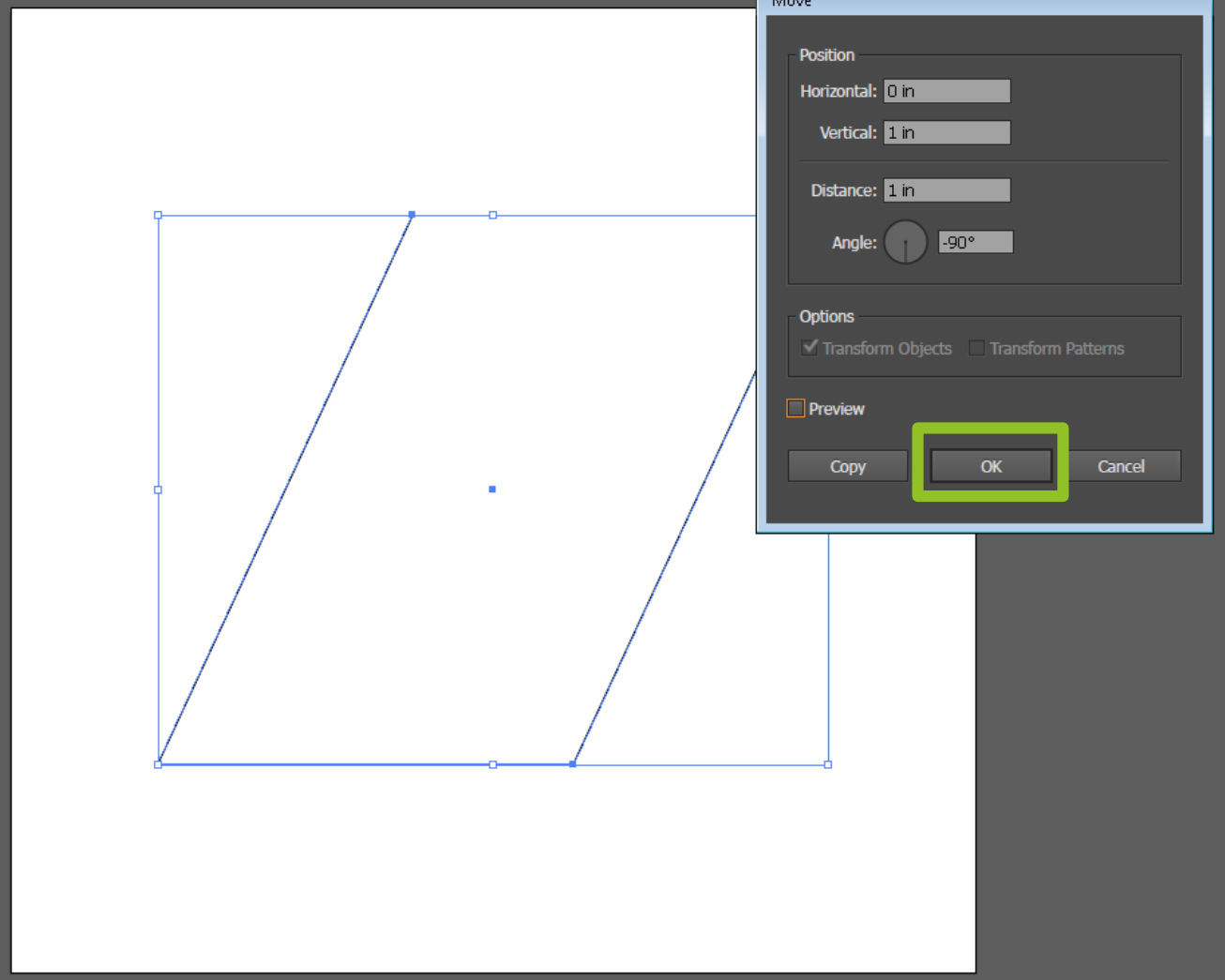
The “Copy” button allows you to create a copy of the shape in the desired location rather than just moving it.



Move

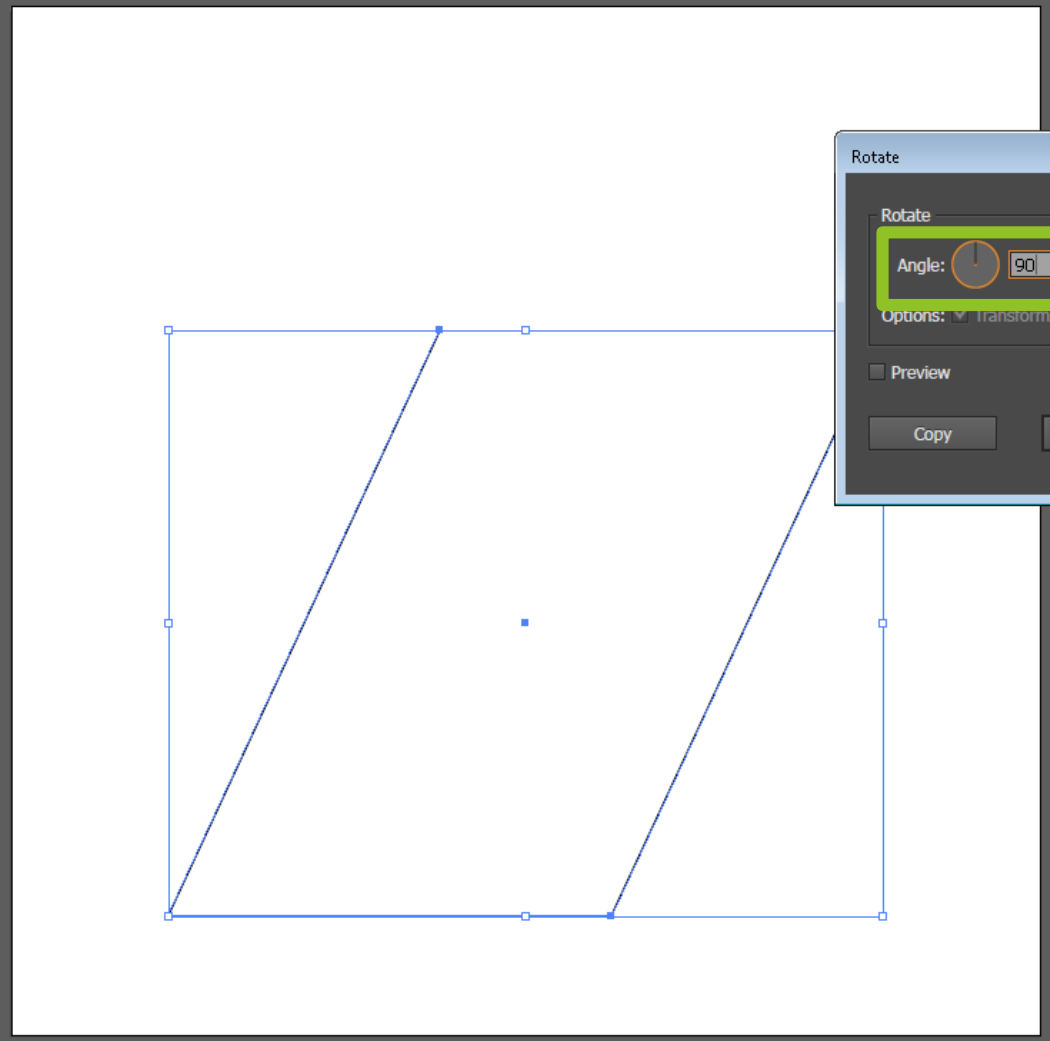
Otherwise, press “Okay” or the **ENTER** key to move your object.

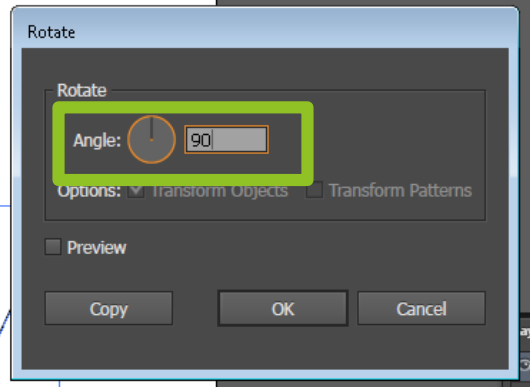
- Hotkey: **CTRL+SHIFT+M**



Rotate

The Rotate option has essentially identical options (Preview, Copy, and Transform), but for rotations about the center of an object.

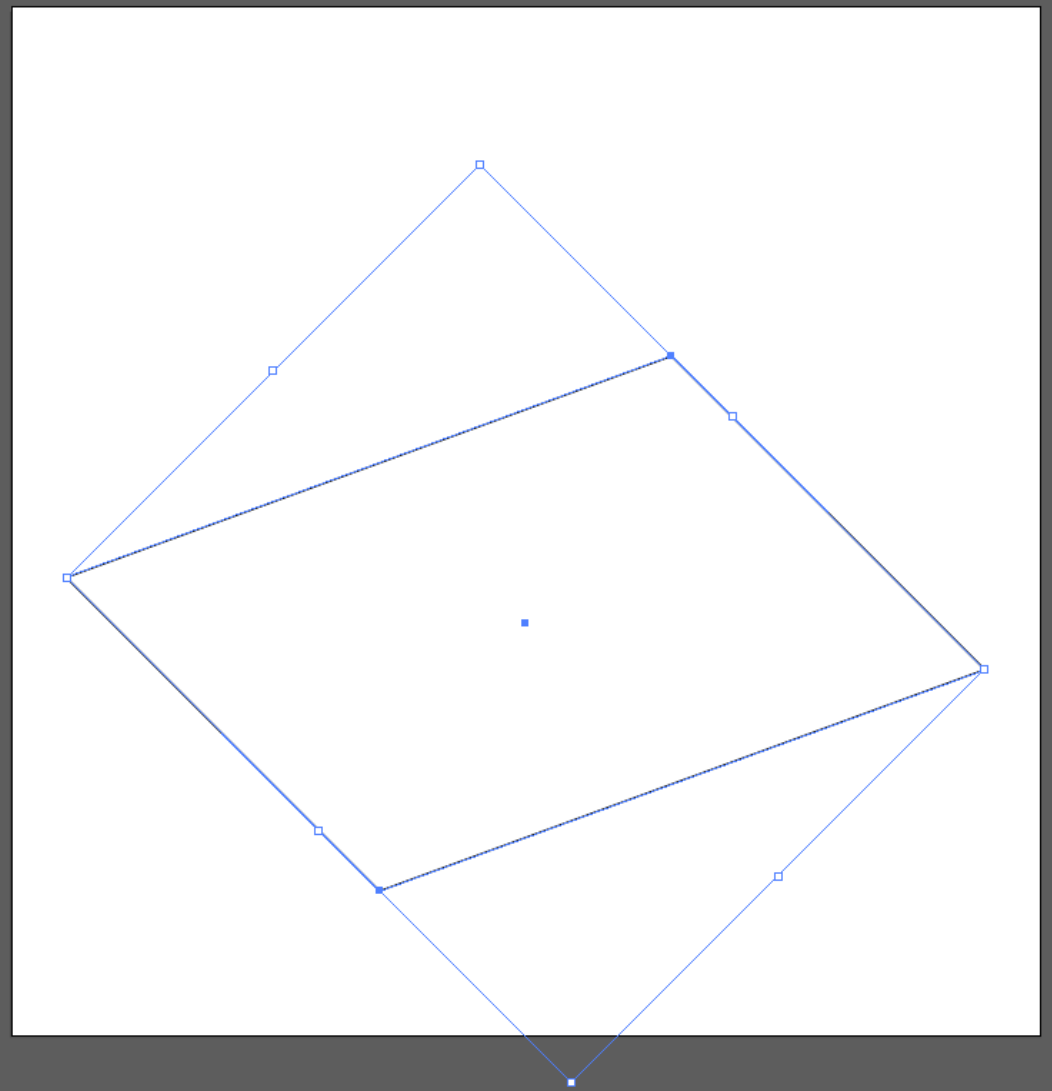




Rotate

You can also Rotate a shape by hovering over a corner of the shape and clicking the arrows that appear.

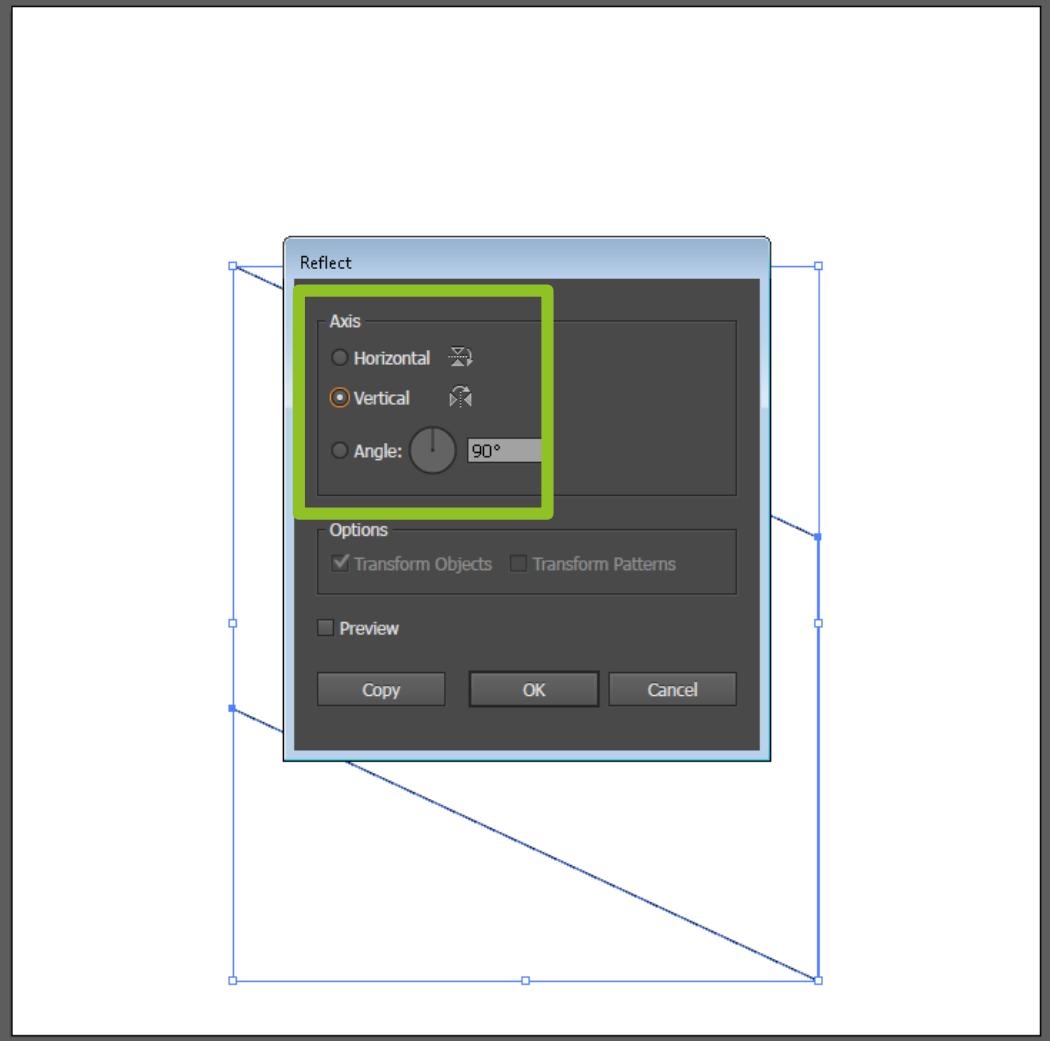
- Hotkey: **SHIFT+DRAG** rounds your rotation to the nearest 45°



Reflect

Note that you can choose the axis of reflection: the horizontal axis, the vertical axis, or an axis at an angle of your choice.

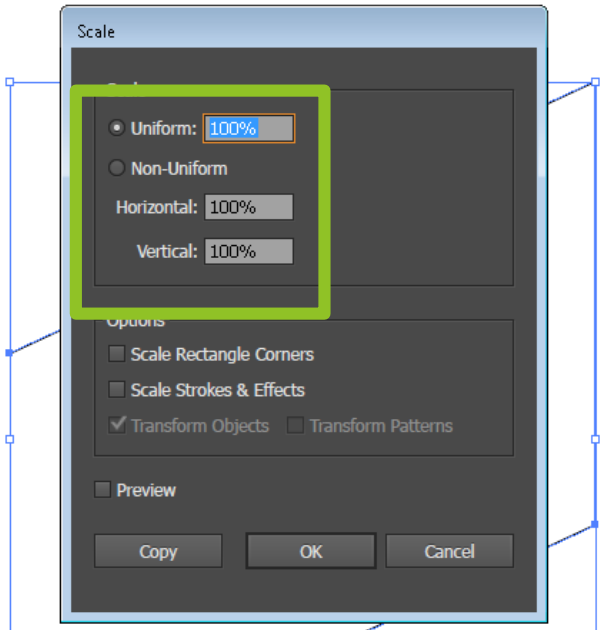
- Hotkey: O



Scale

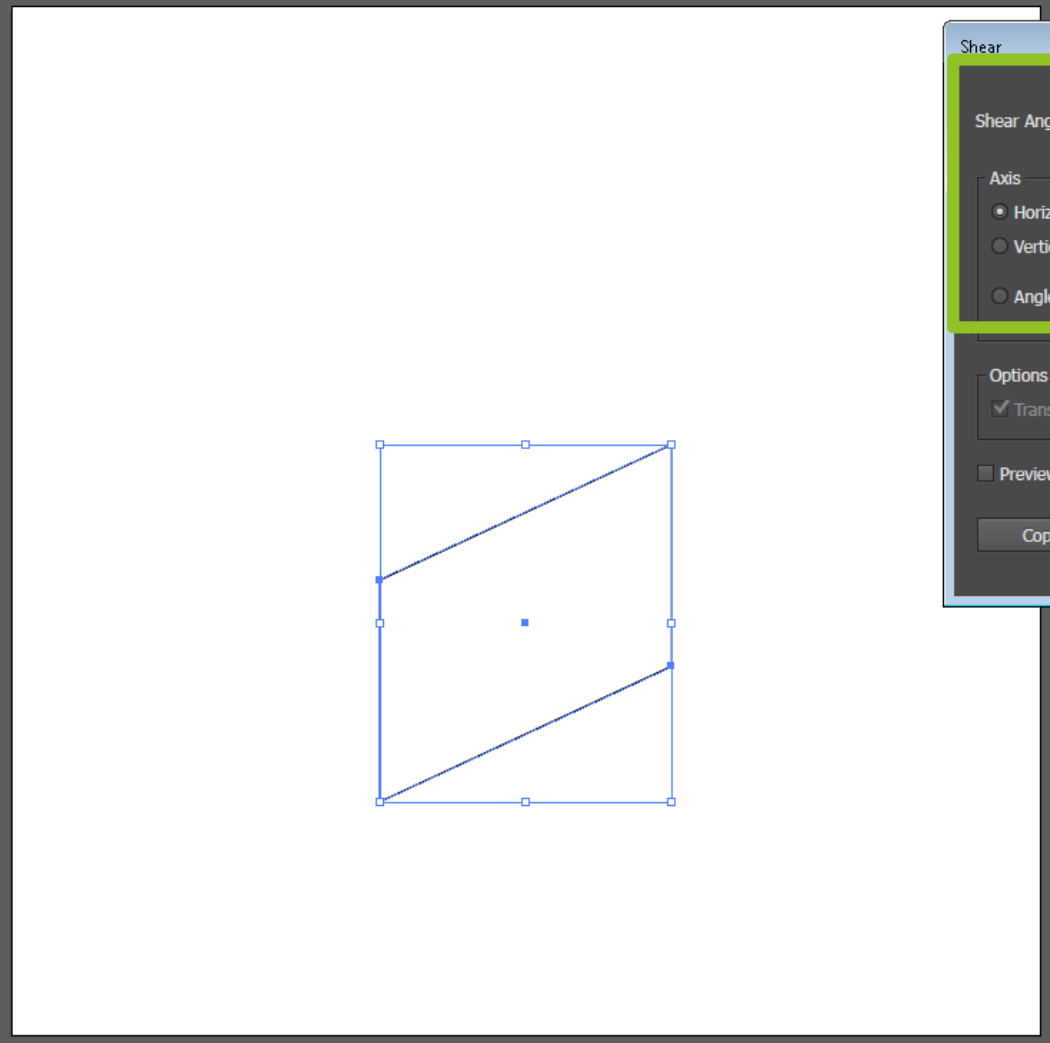
Scale allows you to resize the object precisely (Uniform), or to stretch the horizontal/vertical dimensions independently of one another (Non-Uniform).

- Hotkey: **S**



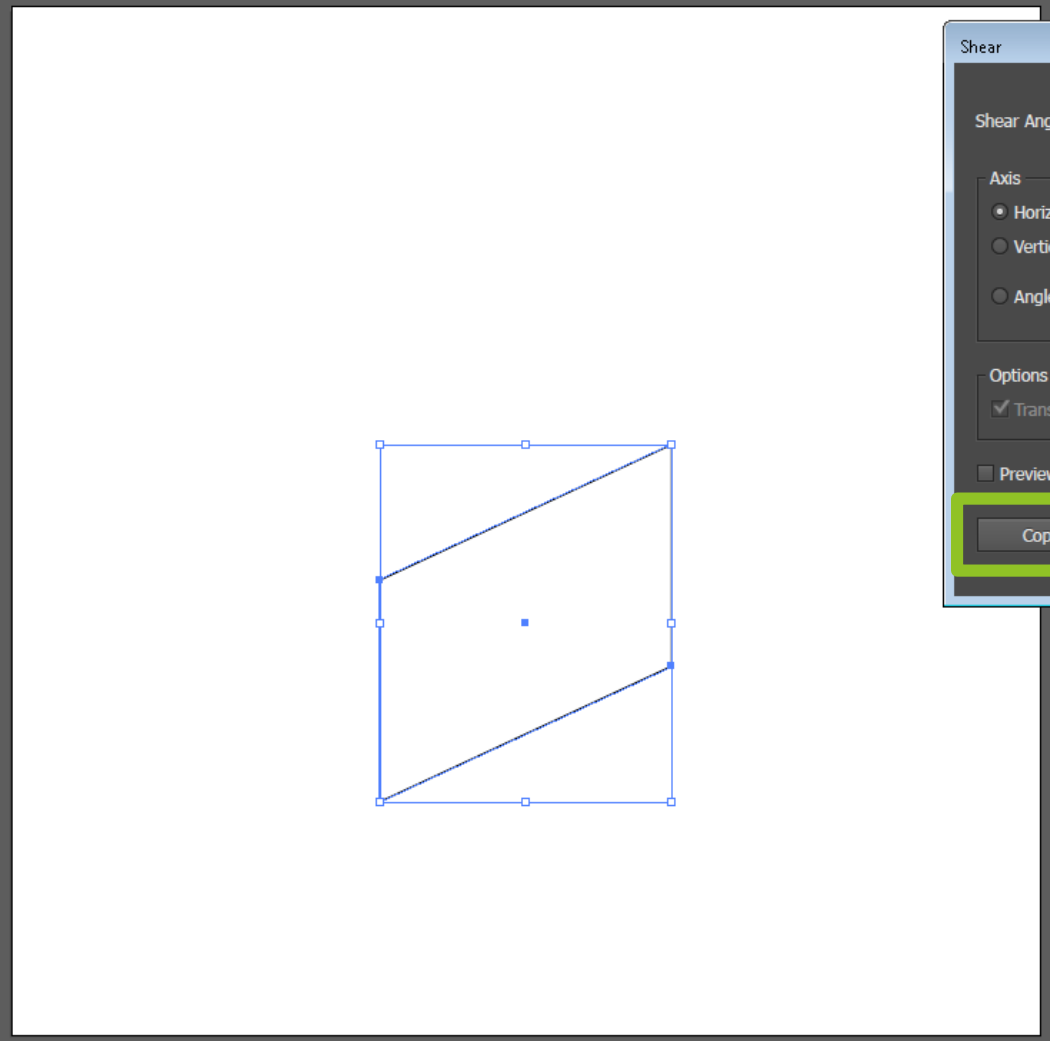
Shear

The Shear window is a little tricky, but it's also rarely used. You effectively distort an object at a given angle with respect to a chosen axis.



Shear

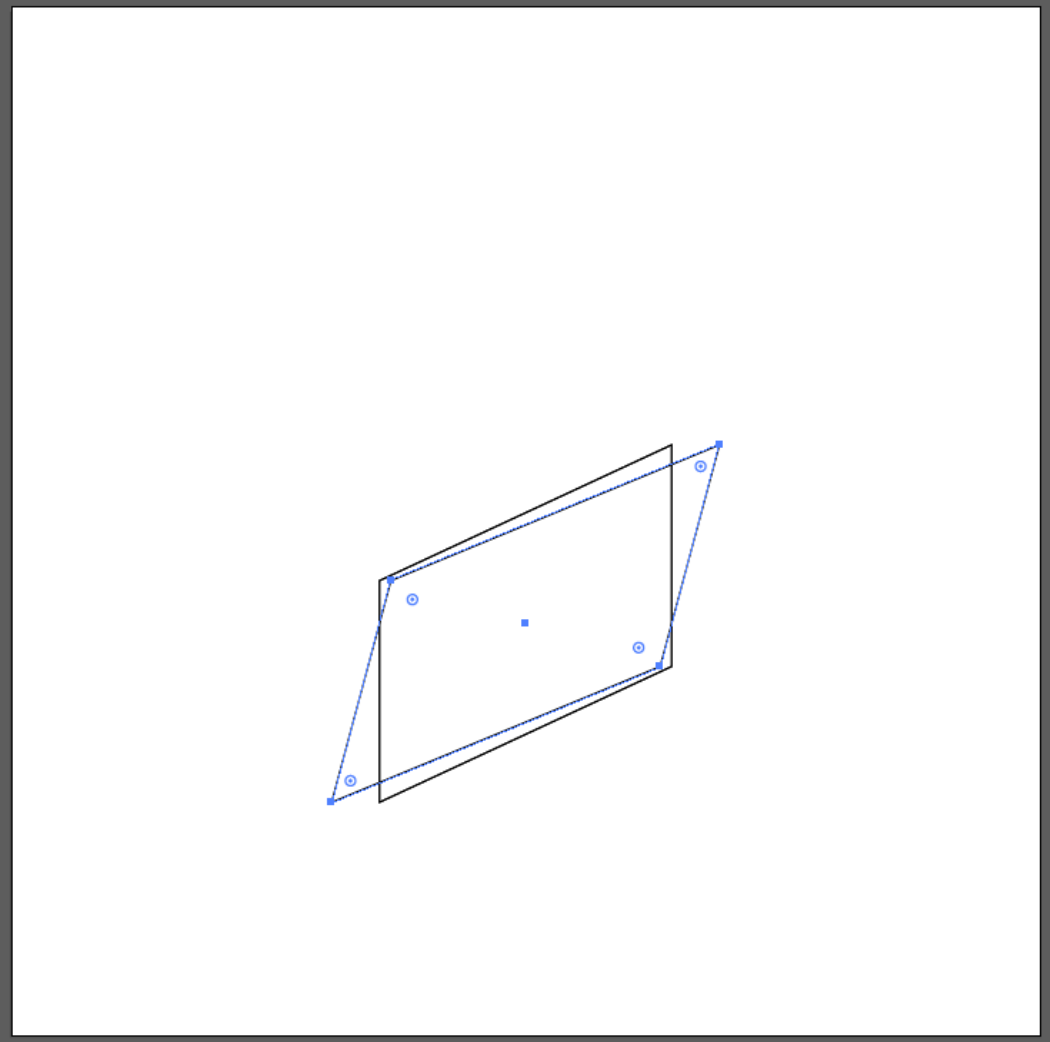
Let's go ahead and make a copy so that we can compare a sheared and unsheared shape.



Shear

To repeat a the last transformation used:

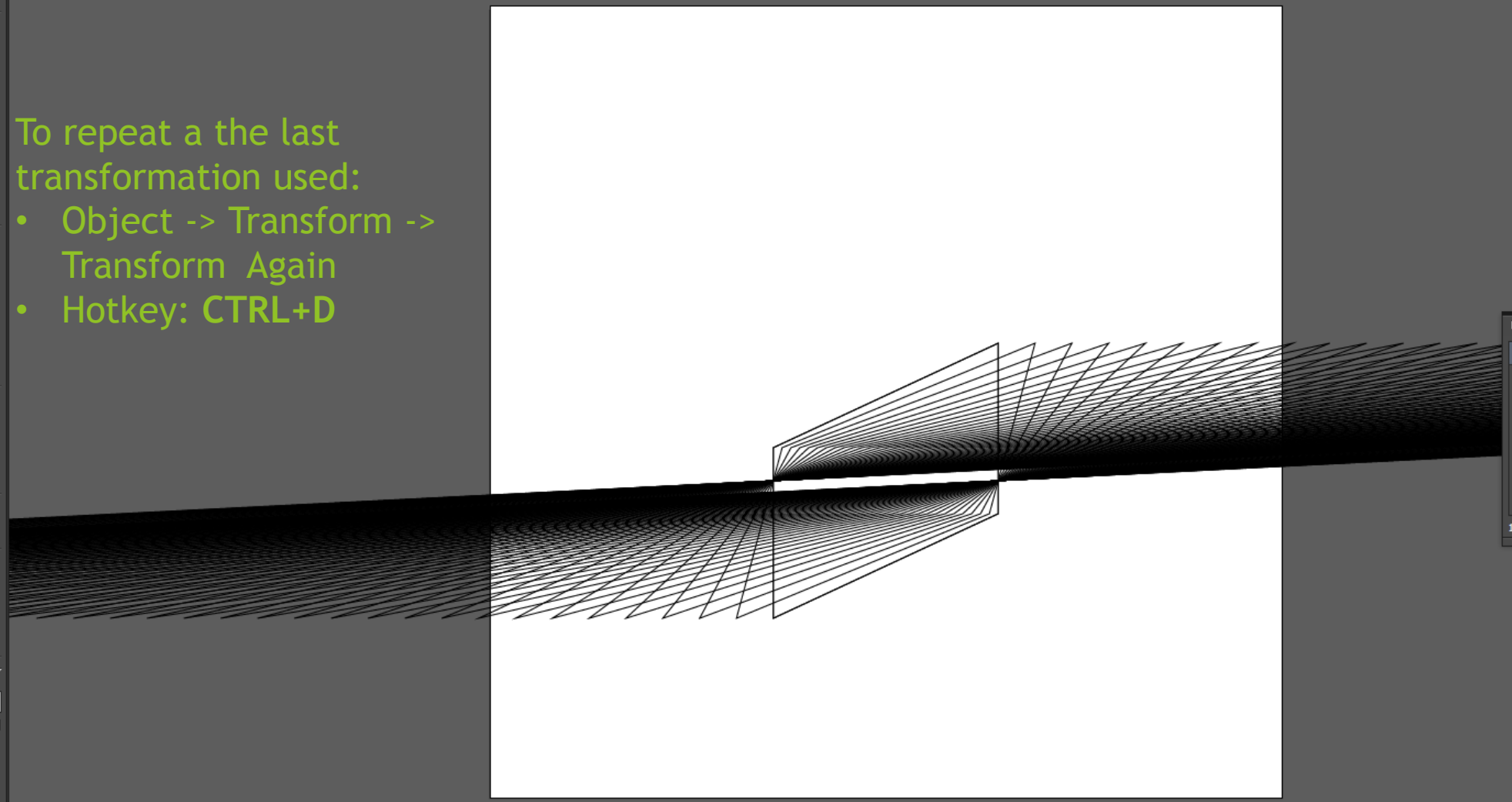
- Object -> Transform -> Transform Again
- Hotkey: **CTRL+D**



Shear

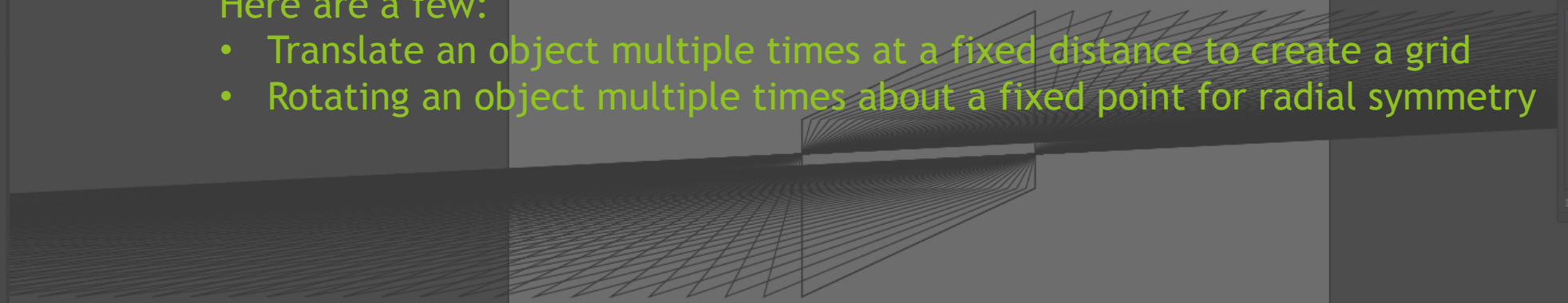
To repeat a the last transformation used:

- Object -> Transform -> Transform Again
- Hotkey: **CTRL+D**

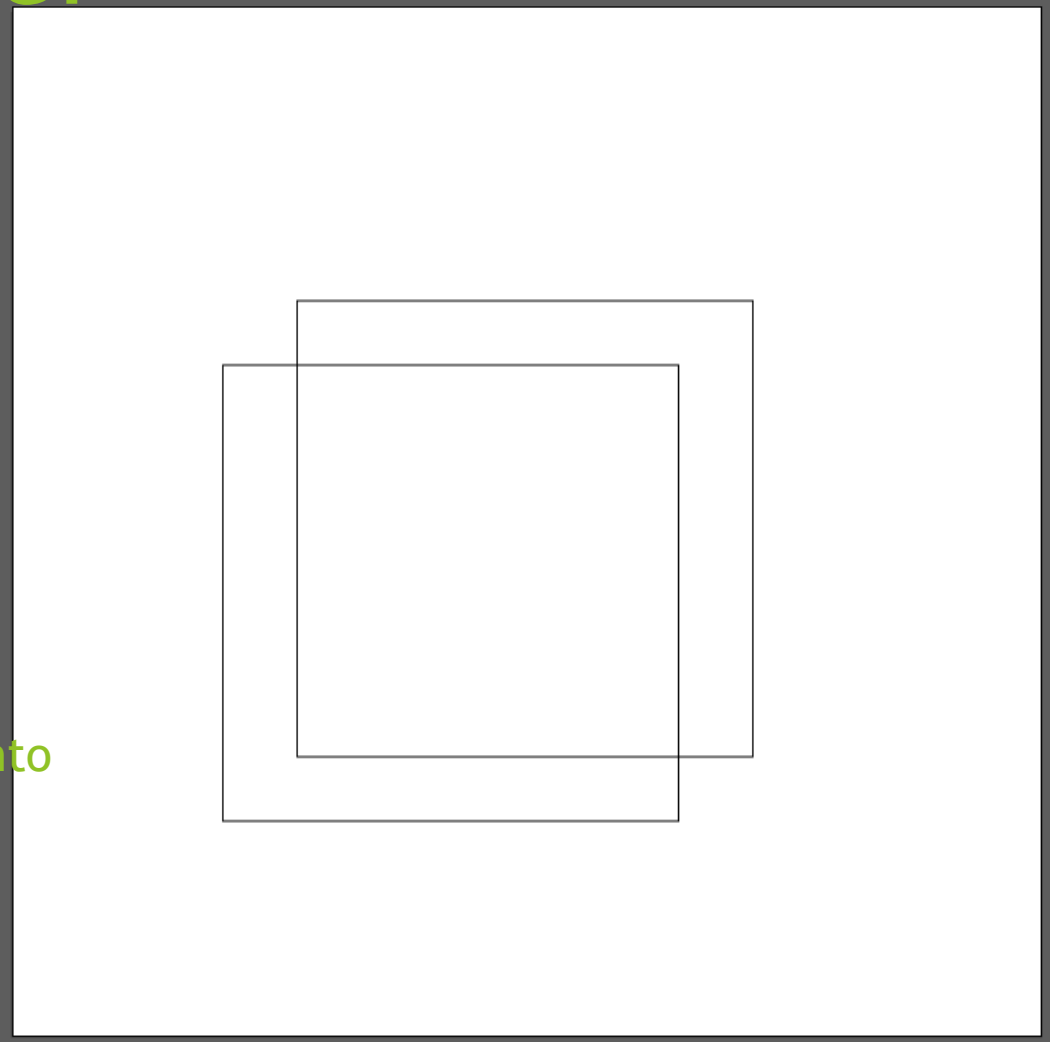


Note: CTRL+D is a very useful tool to rapidly repeat certain transformations.
Here are a few:

- Translate an object multiple times at a fixed distance to create a grid
- Rotating an object multiple times about a fixed point for radial symmetry



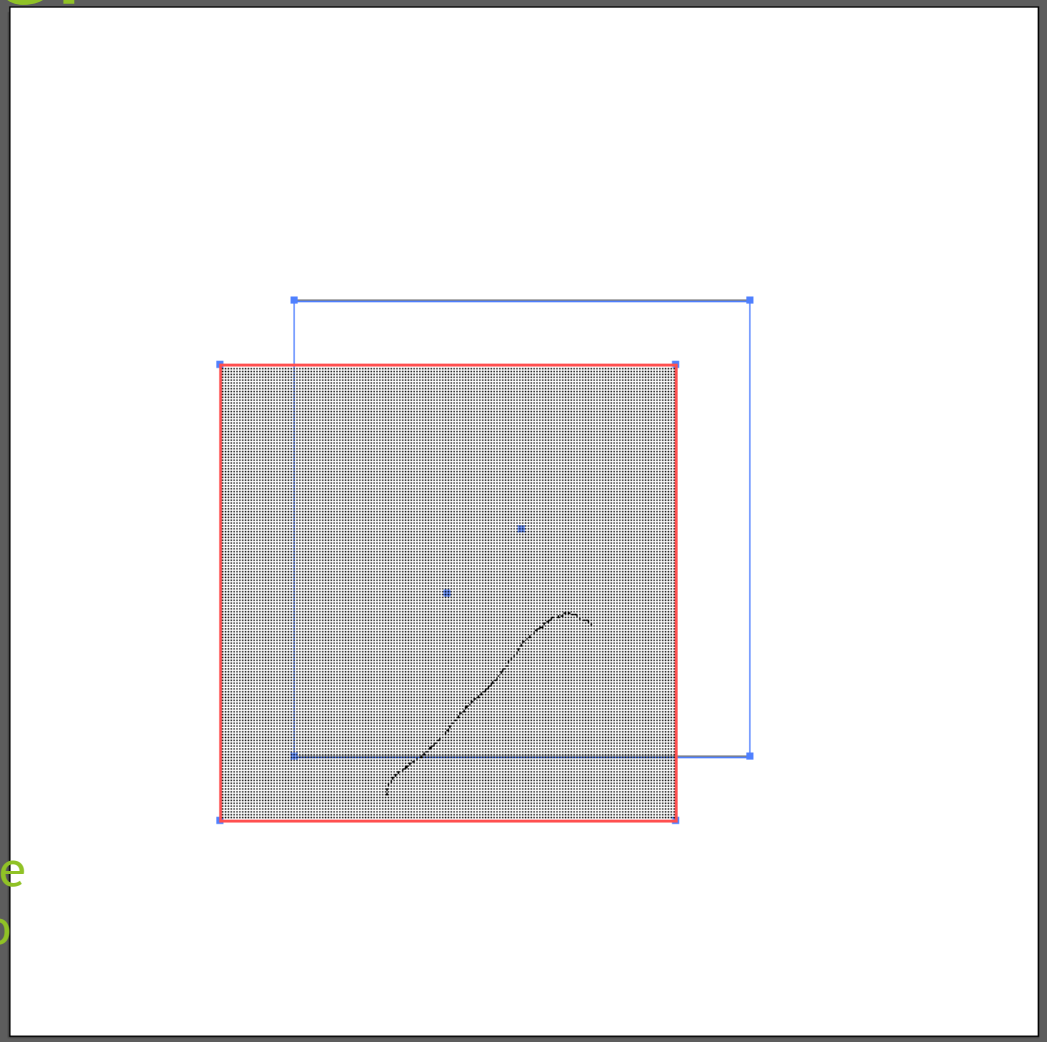
Shapebuilder



Shapebuilder is a powerful tool that allows you to combine multiple shapes into a single shape.

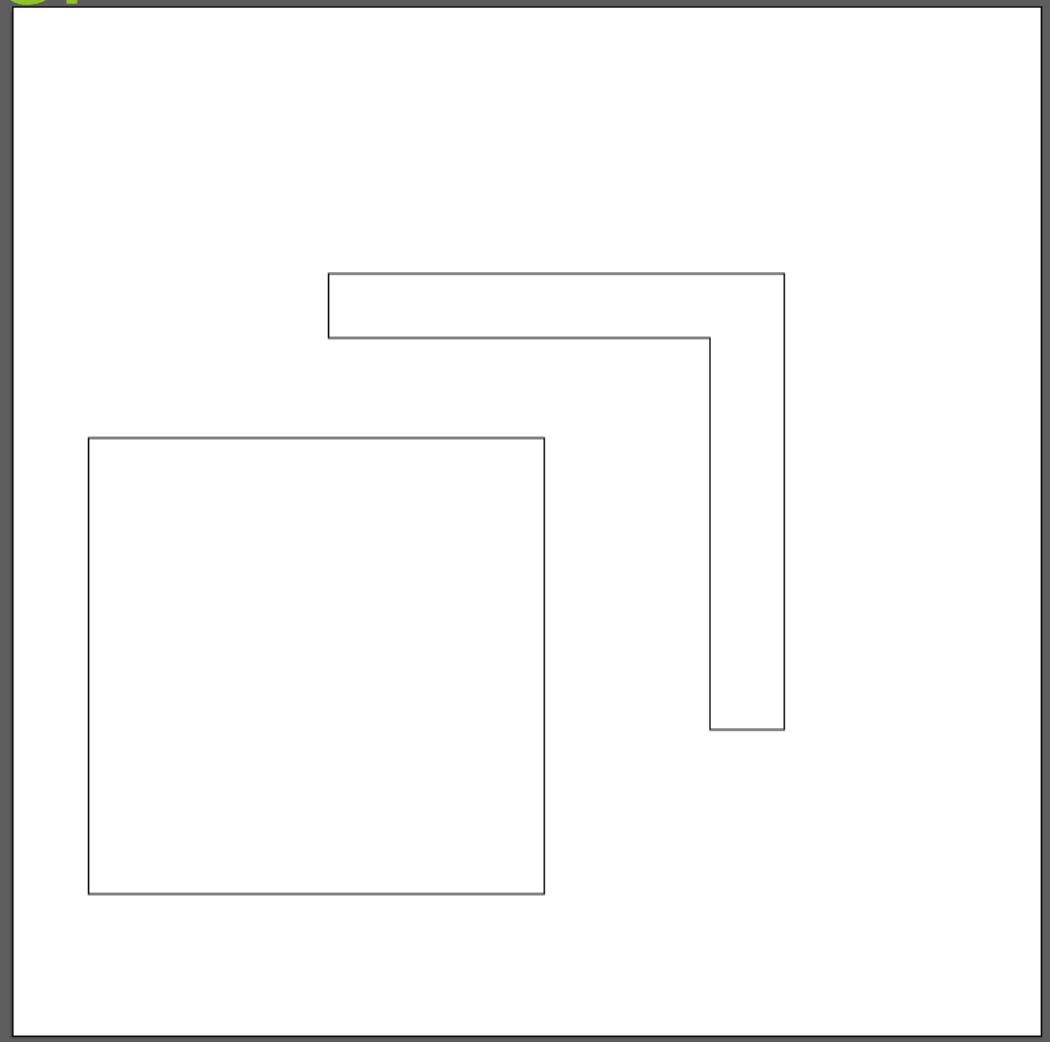
- Hotkey: **SHIFT + M**

Shapebuilder

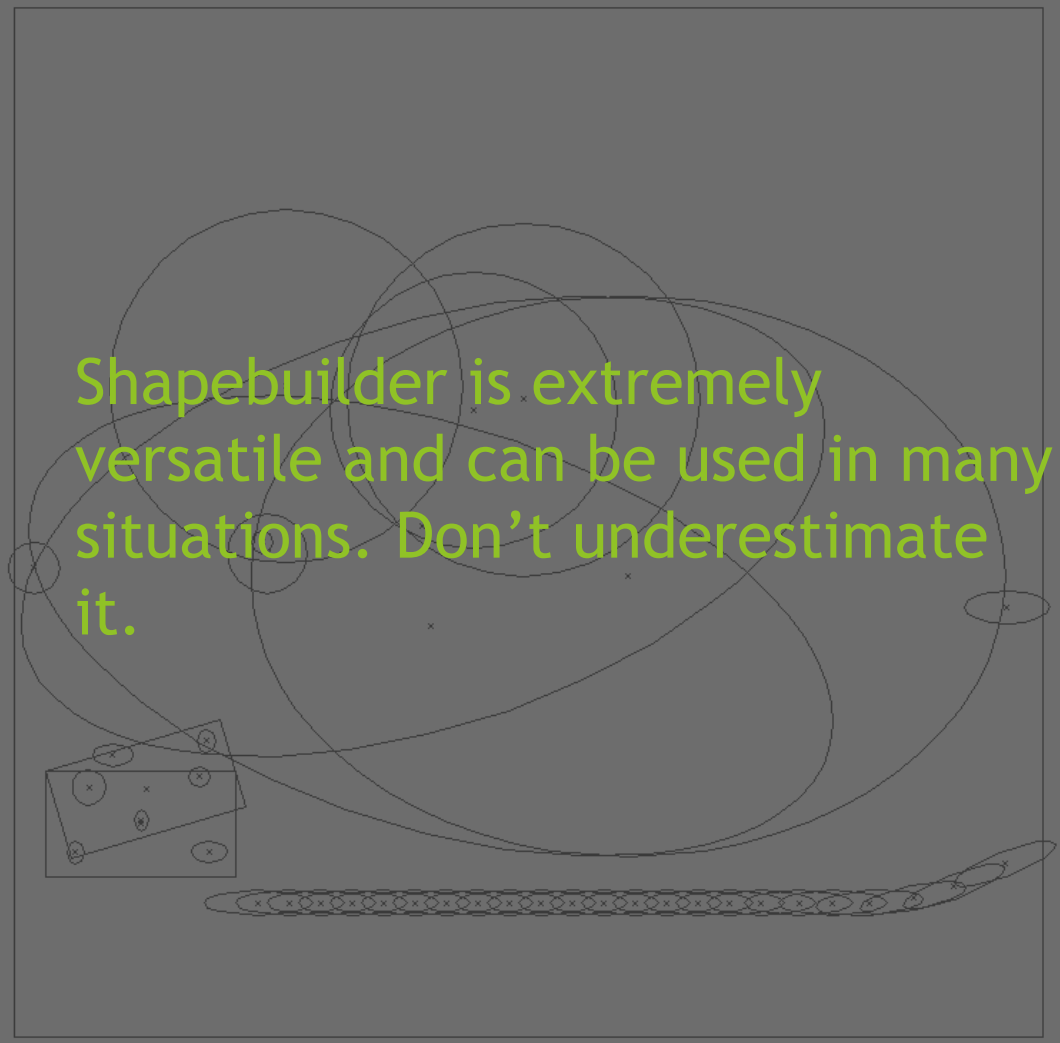


1. Select the shapes you want to combine using Select (Black Mouse/V)
2. Click Shapebuilder
3. Click and drag across the shape areas you want to merge

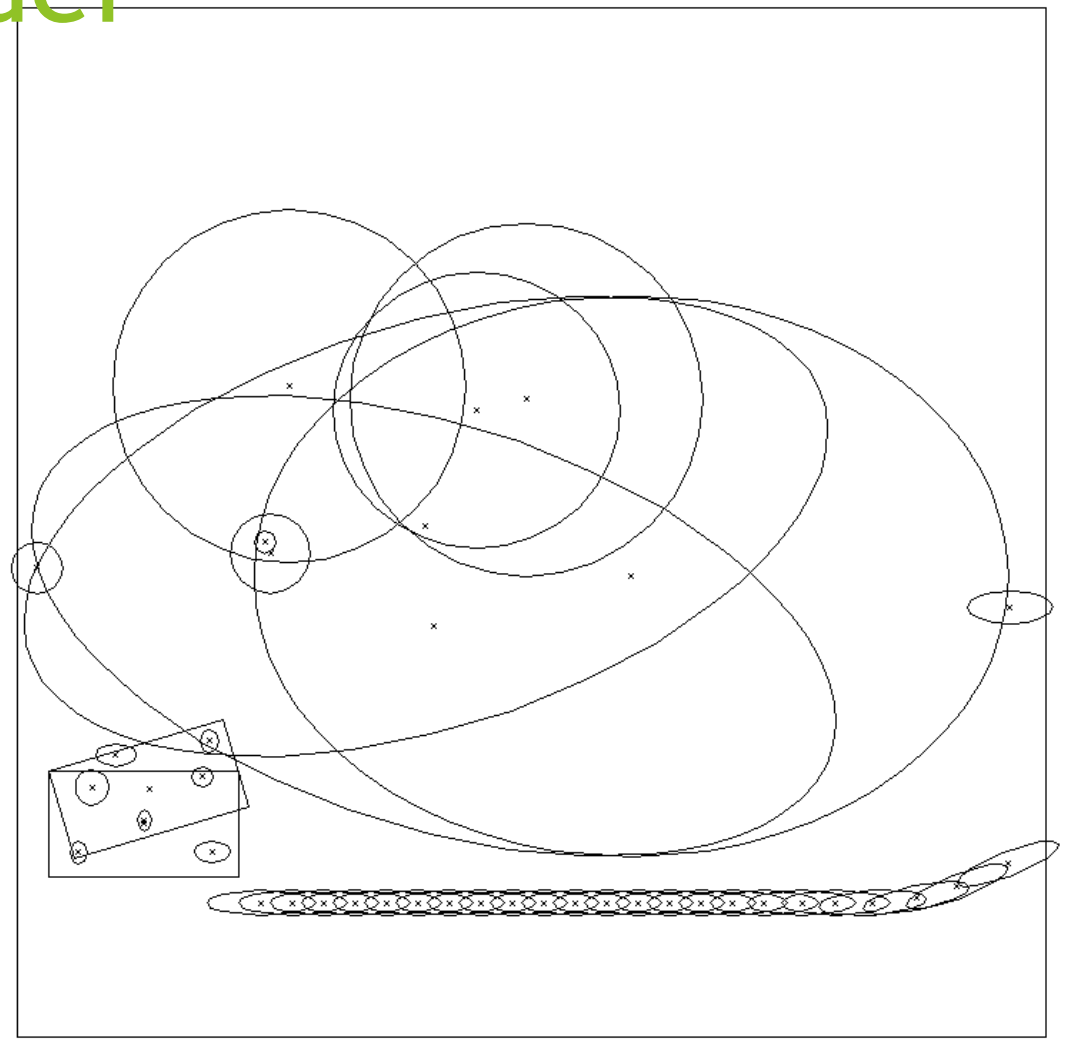
Shapebuilder

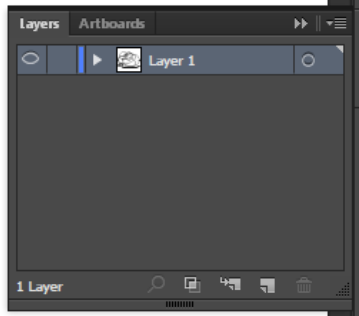


The desired areas are now unique shapes.

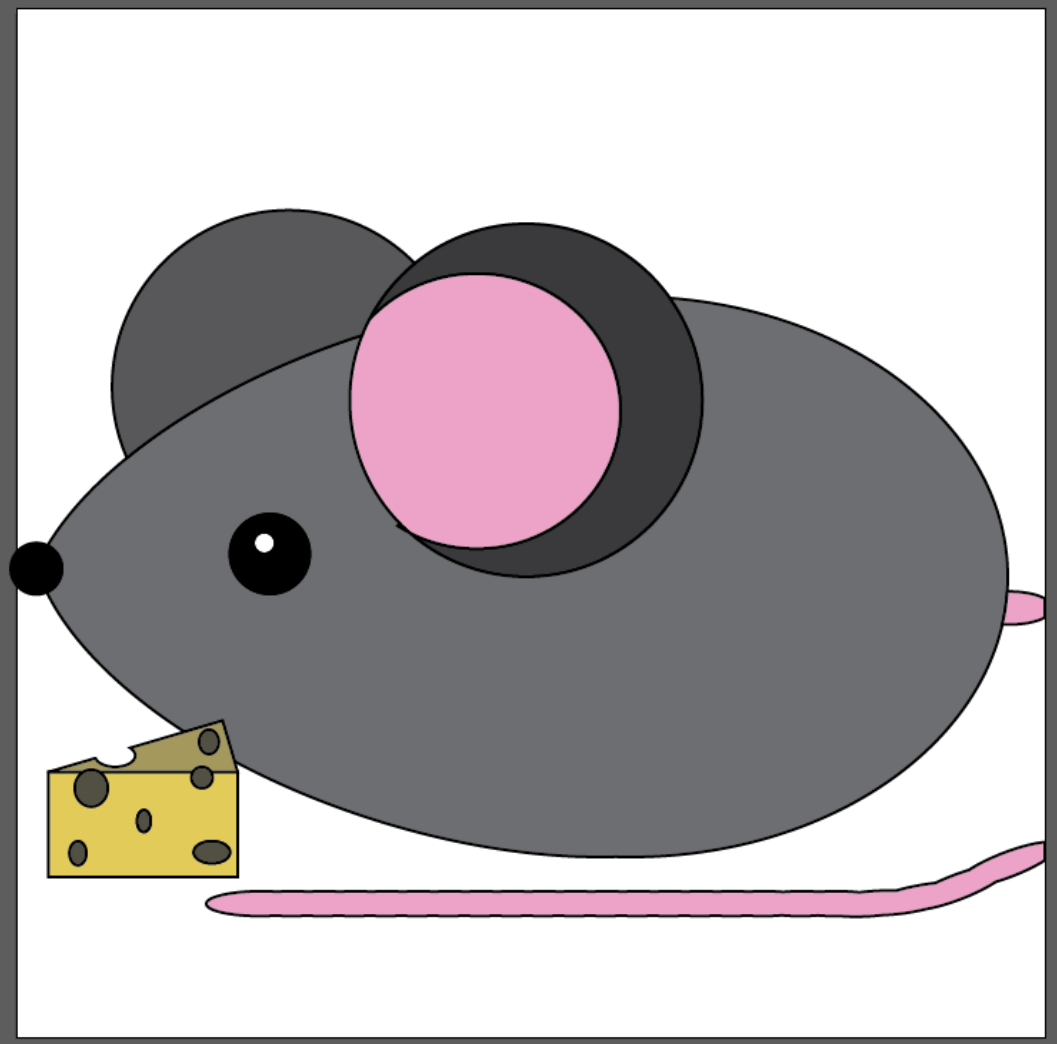

Shapebuilder is extremely versatile and can be used in many situations. Don’t underestimate it.

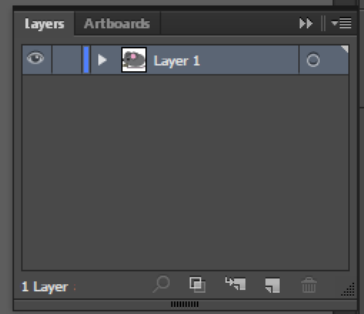
Shapebuilder



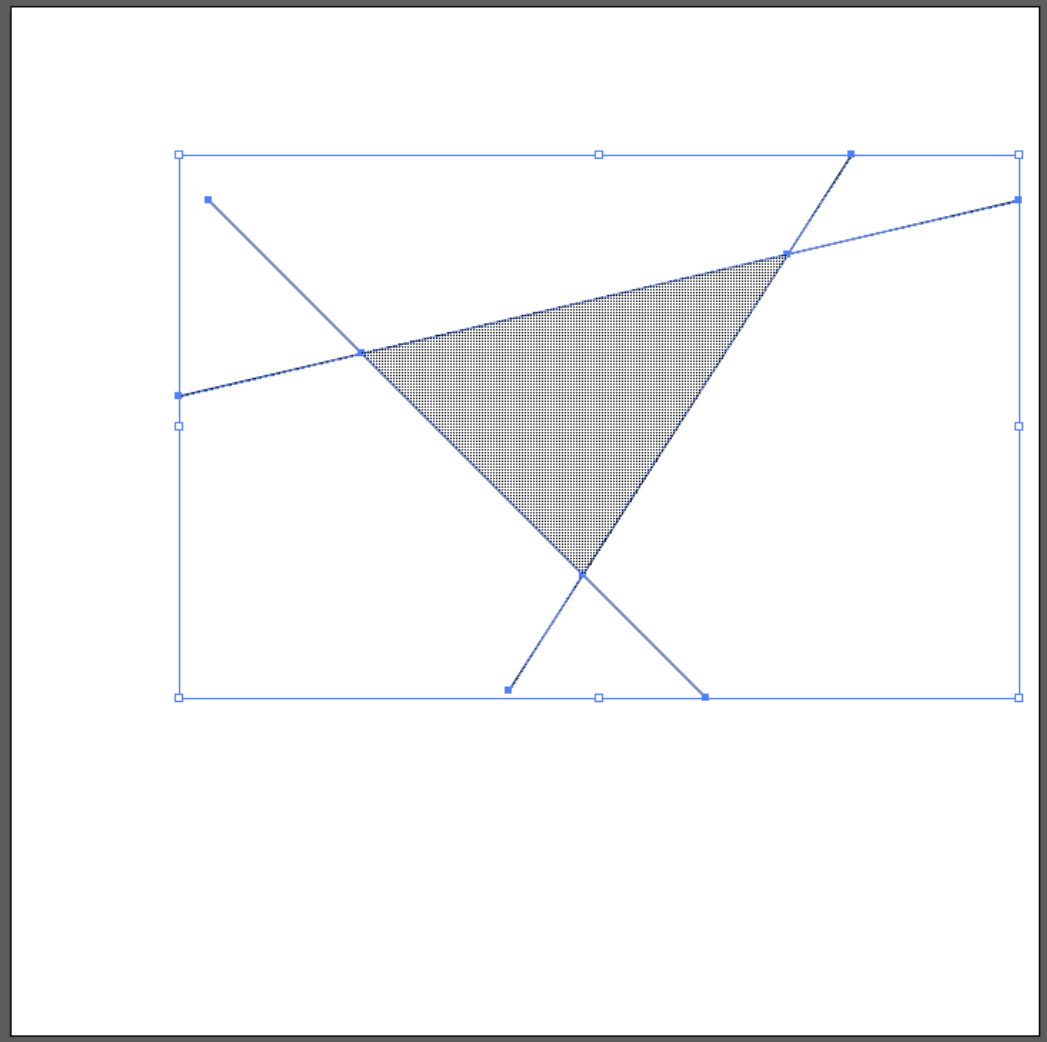


Shapebuilder



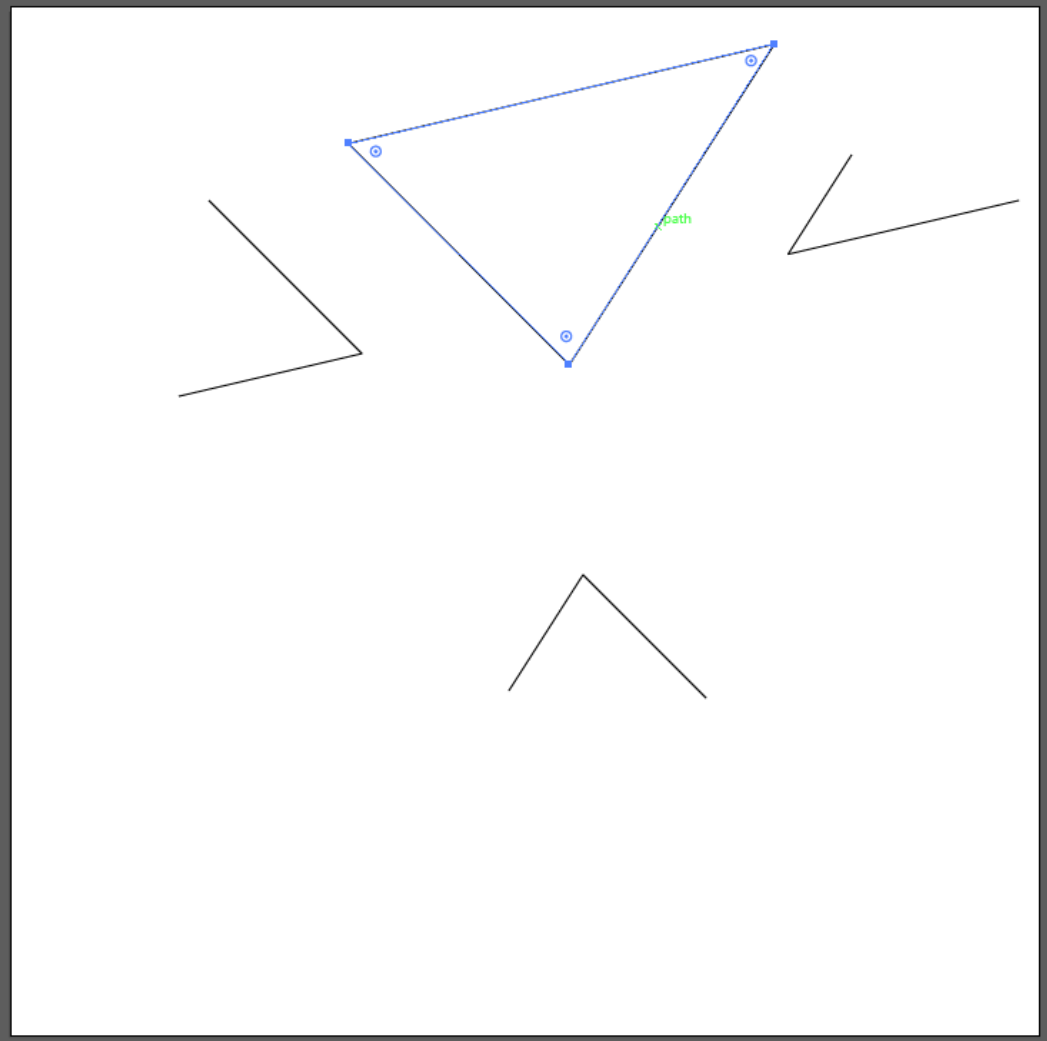


Shapebuilder



Remember the not-so-useful lines from before? You can also use those to make shapes now.

Shapebuilder



Remember the not-so-useful lines from before? You can also use those to make shapes now. This is great for making sure that you've created a continuous path.

Basics Wrap-Up

- Leaving this tutorial, you should be able to:
  - Create shapes using the AI built-in shapes and your own lines
  - Use shapebuilder to convert paths into shapes
  - Use selection/direct selection to control specific aspects of your shape