How to convert a stained glass pattern for laser cutting

.

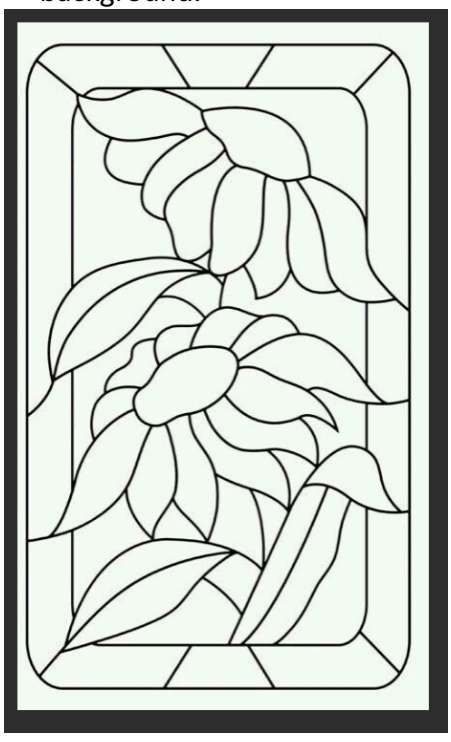
To get stained glass patterns, just search the web for stained glass patterns. There are literally thousands to choose from.

Photoshop

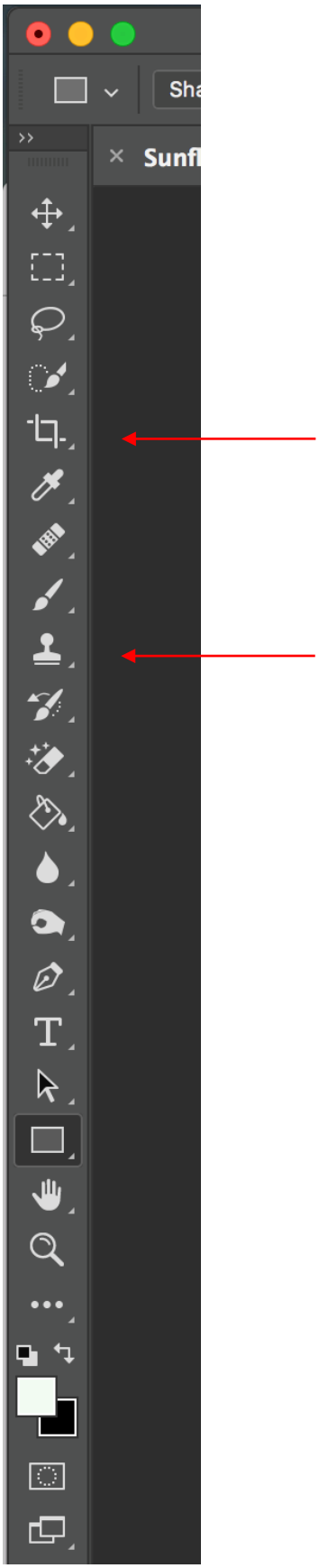
In Photoshop, open the stained glass pattern.

Clean Up

Clean up the pattern so that the pattern is black on a white background.

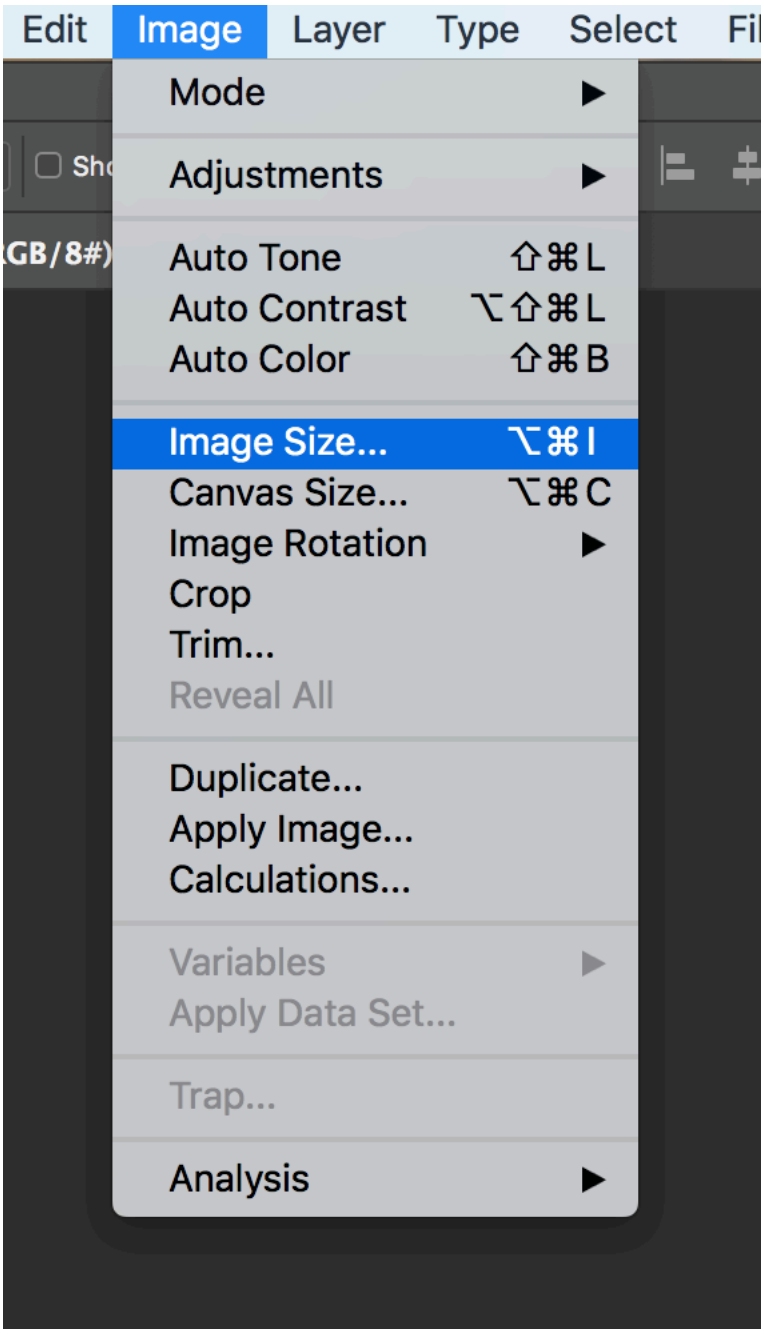


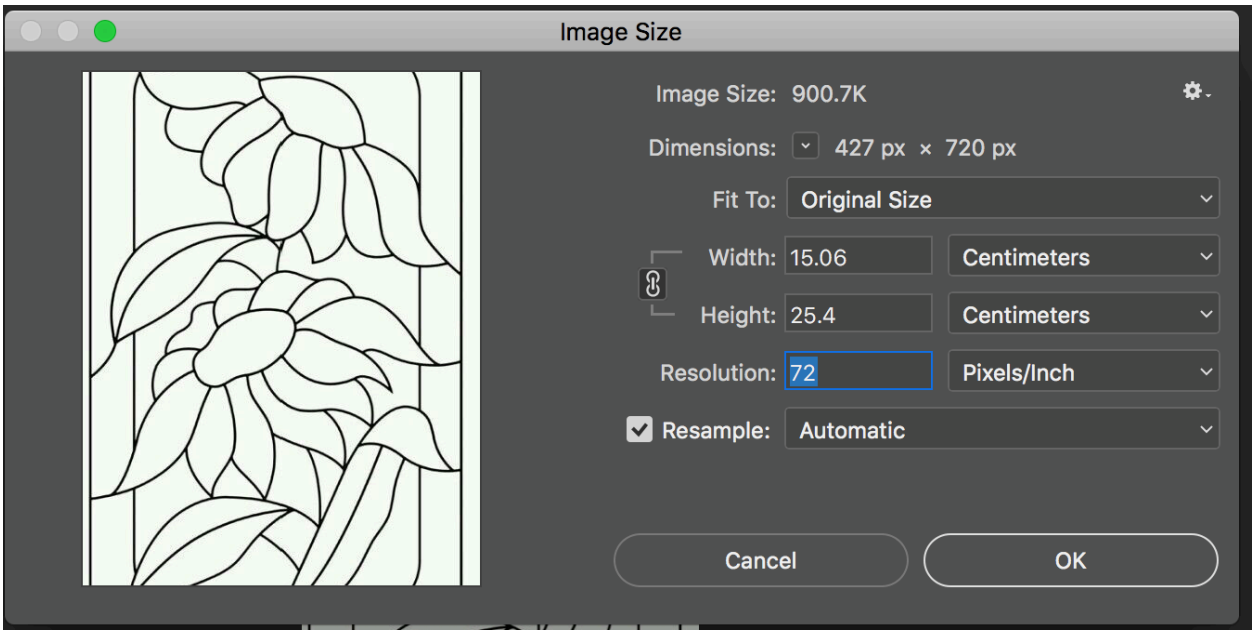
The easiest way to clean up the pattern is with the Clone Stamp Tool and Crop Tool.



Resize

Next resize the image so that it is an easy size to work with.

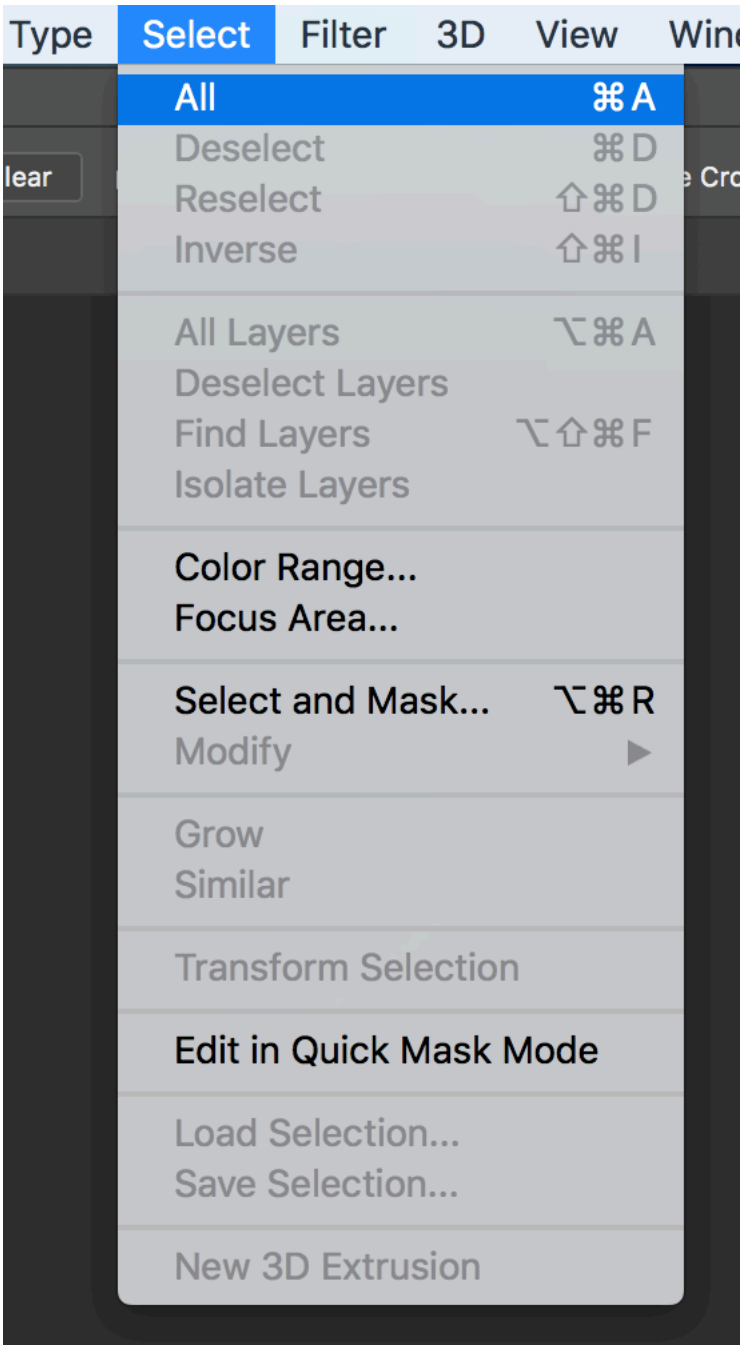

Edit
Image
Layer
Type
Select
Fi
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis

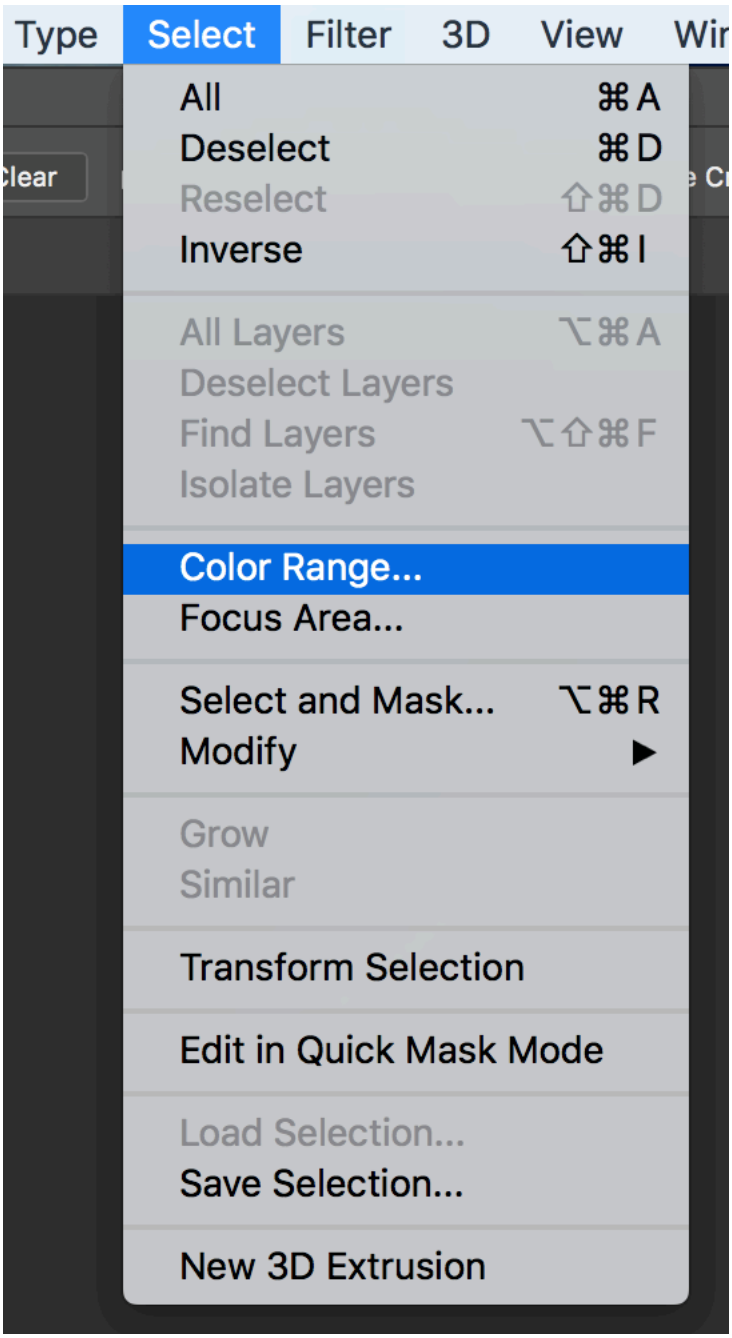


Increase or decrease the resolution as needed.

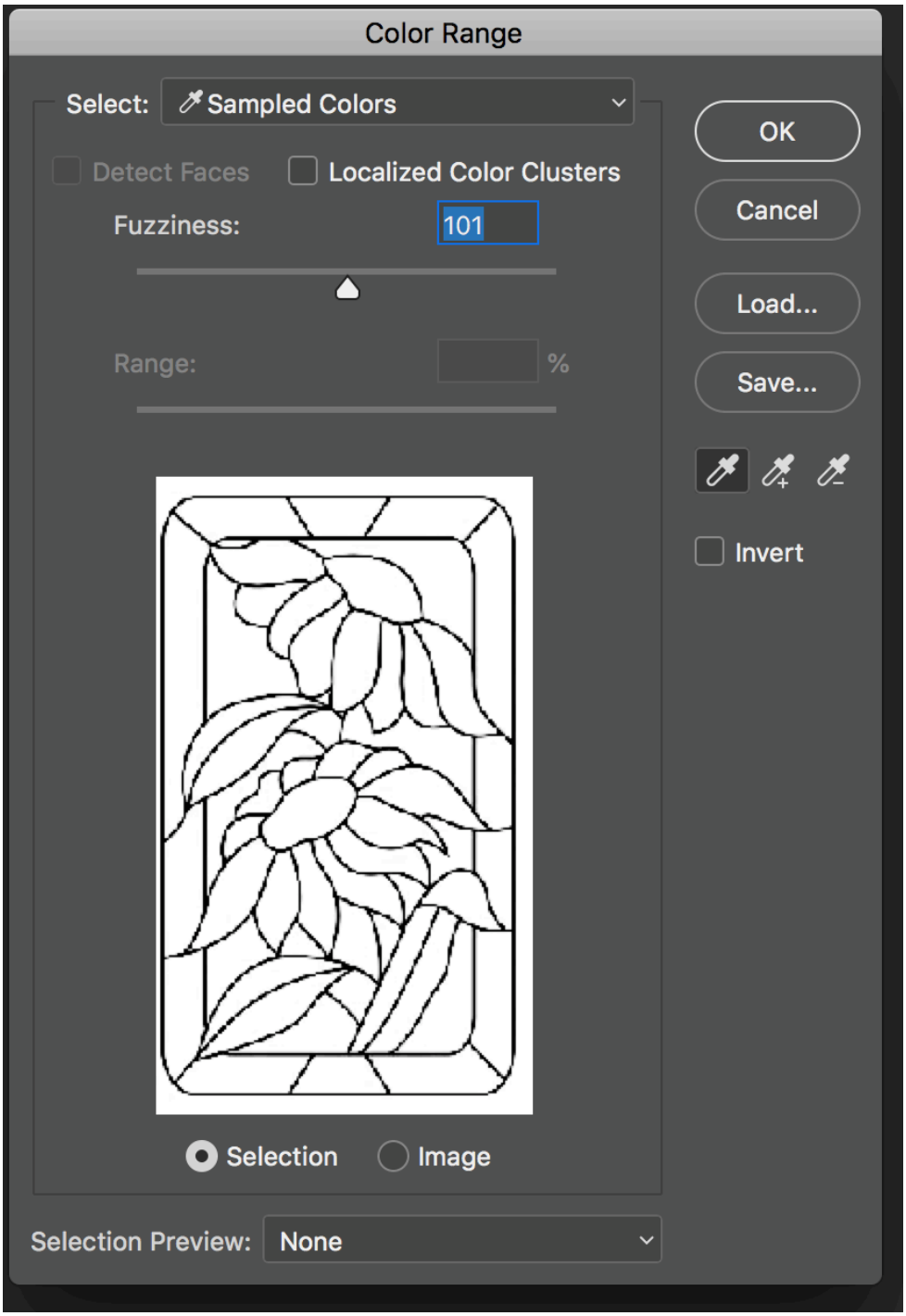
Color Range

Select All and select Color Range



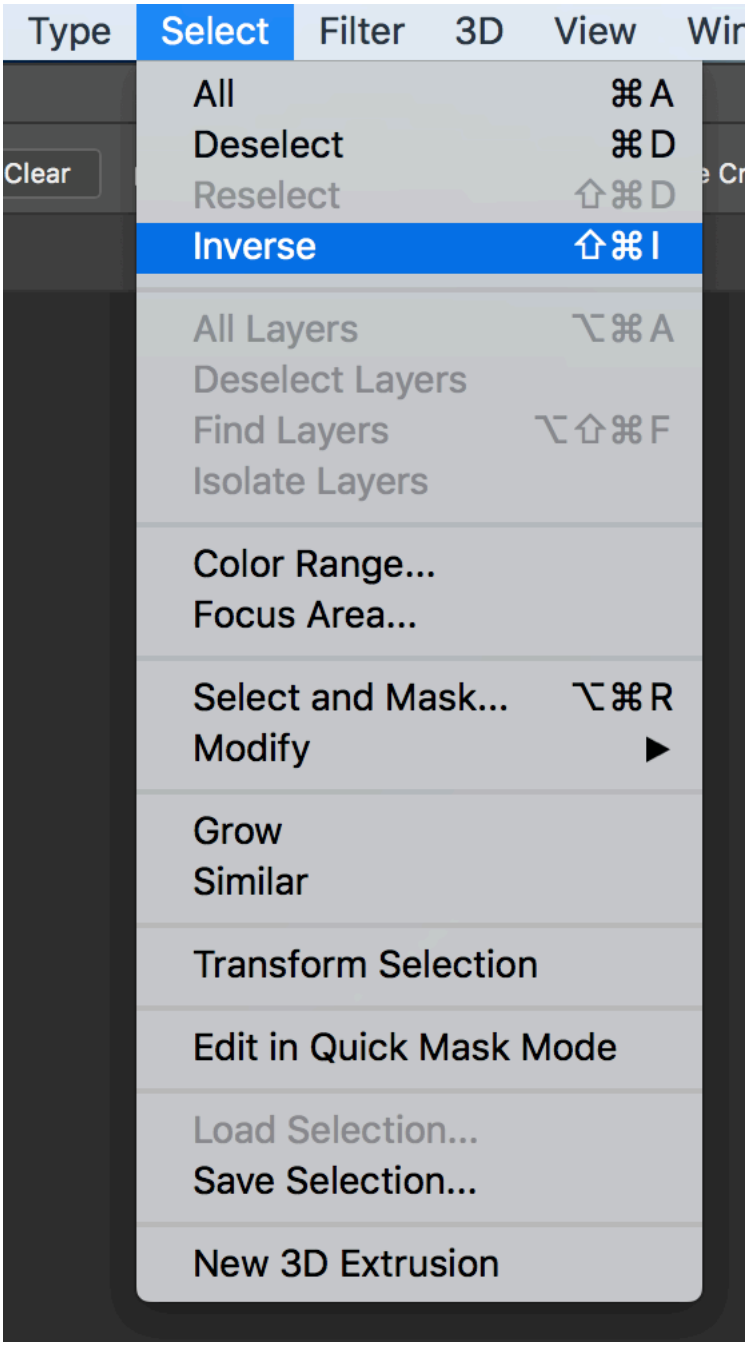


Move the cursor over a White area of the image. The cursor will change into an eye dropper. Left Click the mouse button.



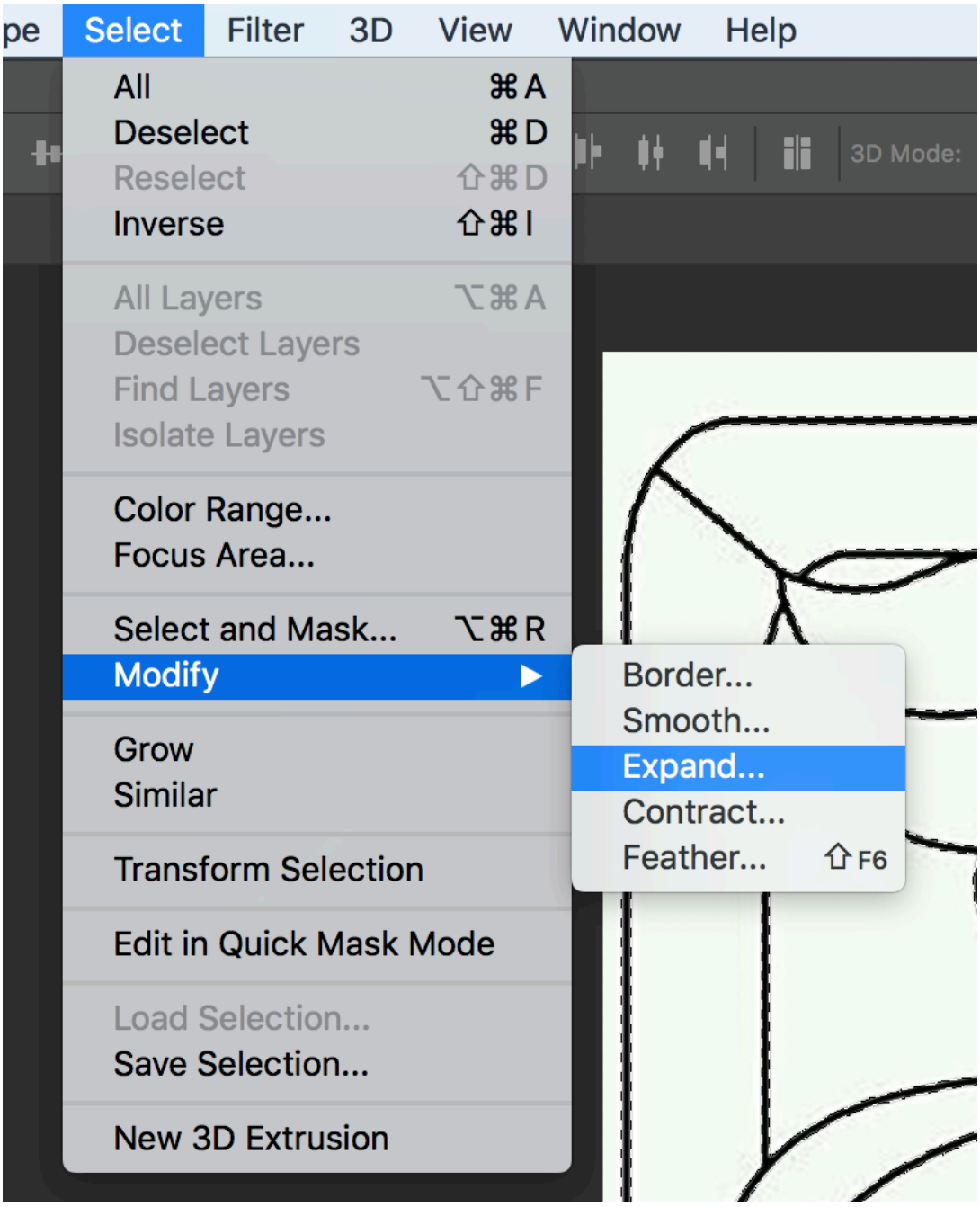
Adjust the Fuzziness slider to get a good Black and White image in the preview window. Click the OK button.

Inverse the selection.

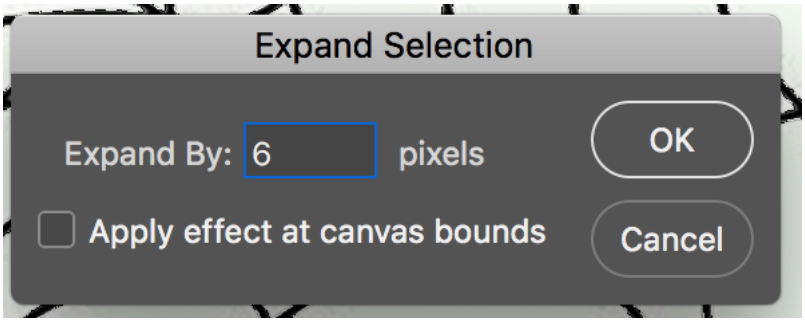


Expand

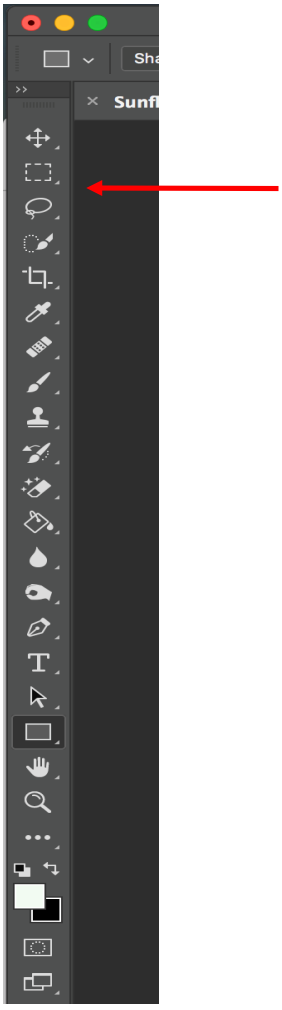
Select Modify than Expand



Enter an Expand value between 2 and 8. Higher values produce a thicker frame. If the frame is too thin, it will not be very strong.

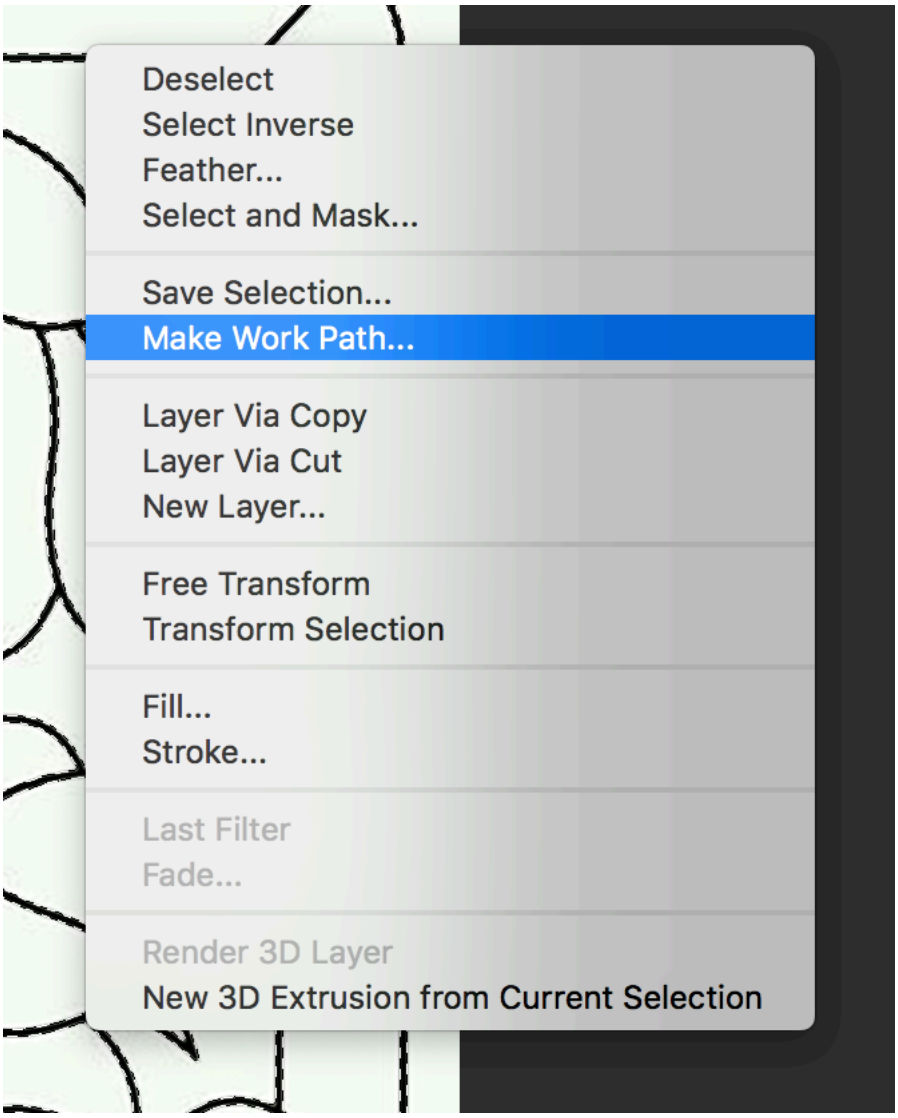


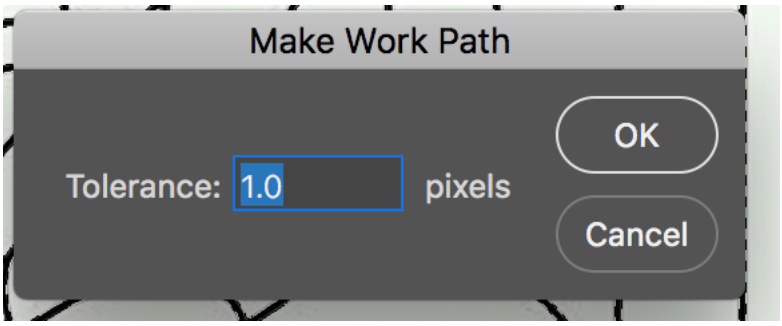
Select the Rectangular Selection Tool.



Work Path

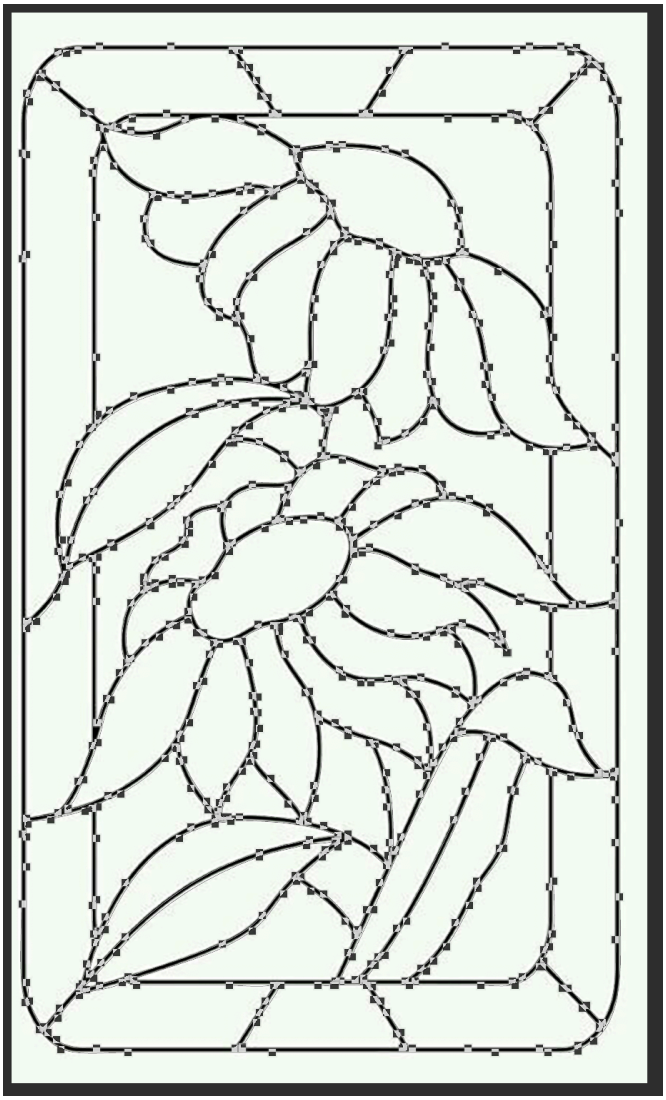
Create a Work Path by placing the cursor over a Black line and Right Click. The cursor will change to an arrow outline with a dashed line box.





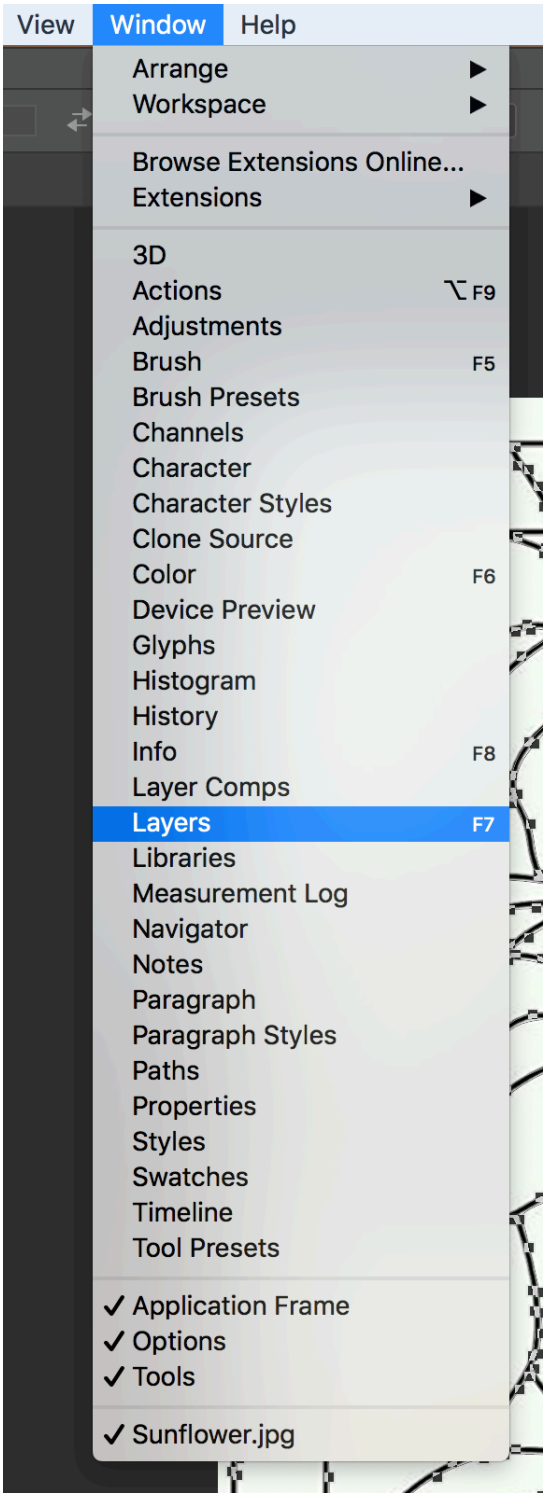
Leave the Tolerance at 1 and click the OK button.

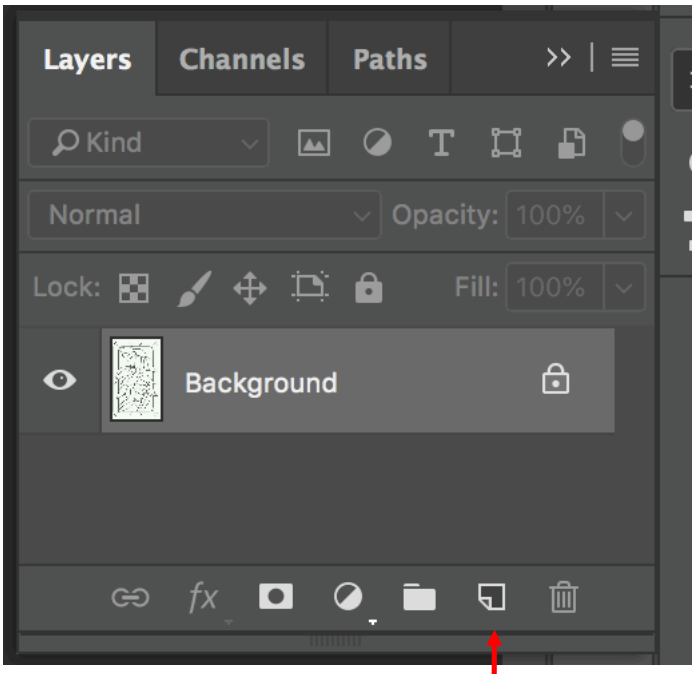
The image should now look like this.



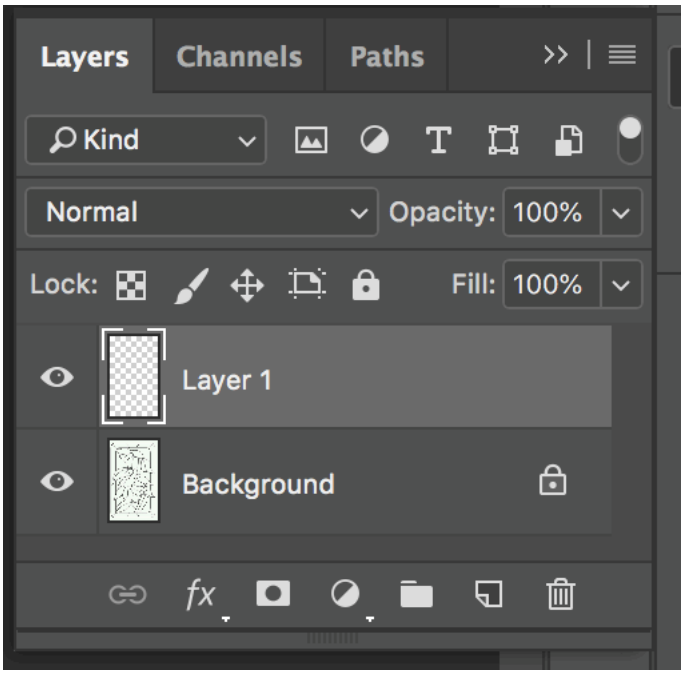
Layers

Create a New Layer.



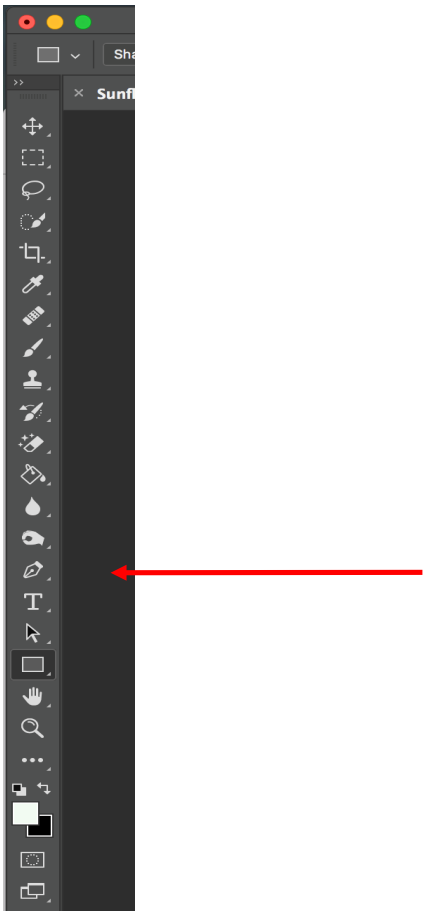


Click on the New Layer Icon.

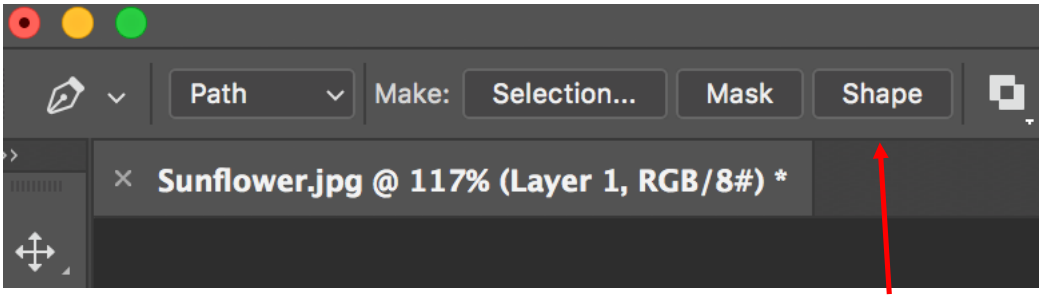


Final Steps

Select the Pen Tool.

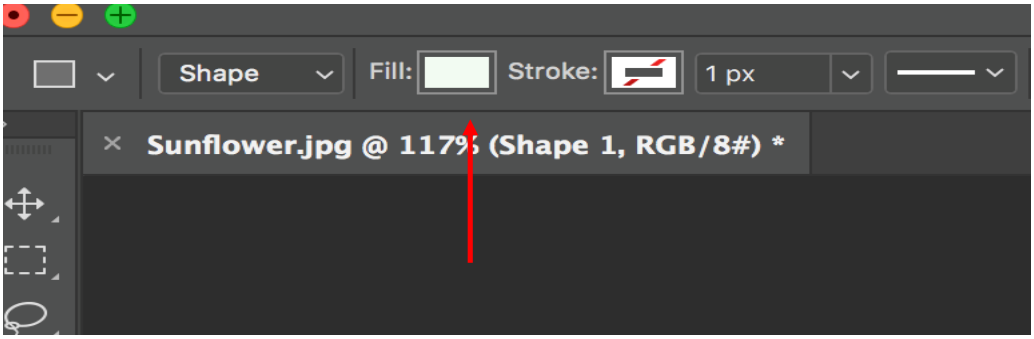


Click on Shape.

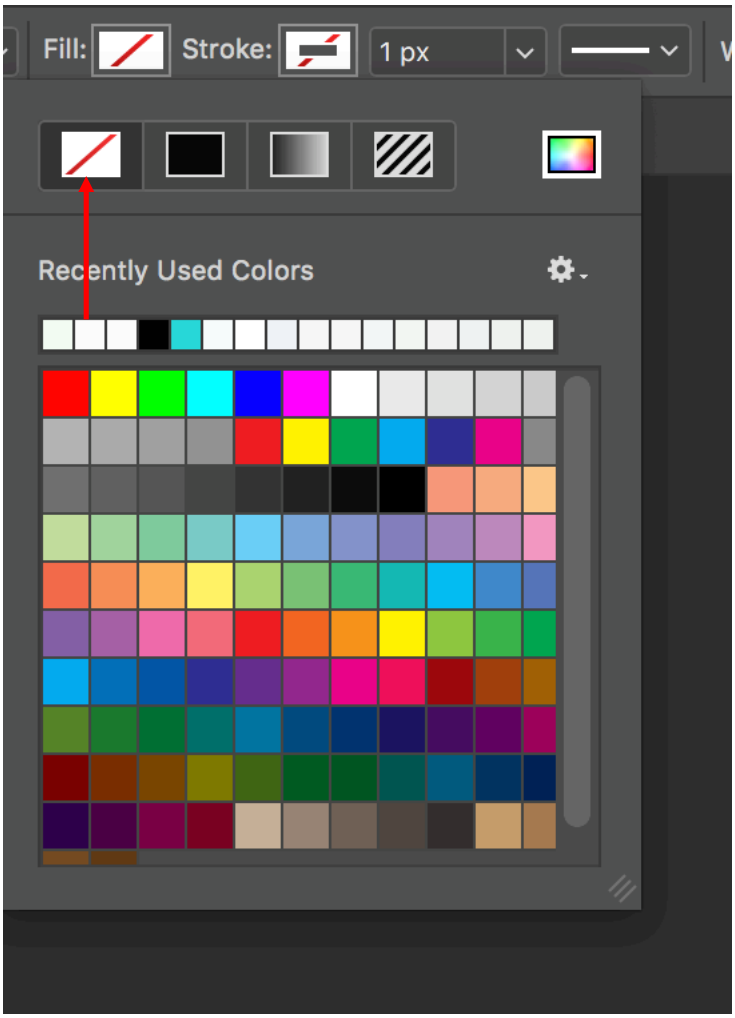


Select the Rectangle Tool.

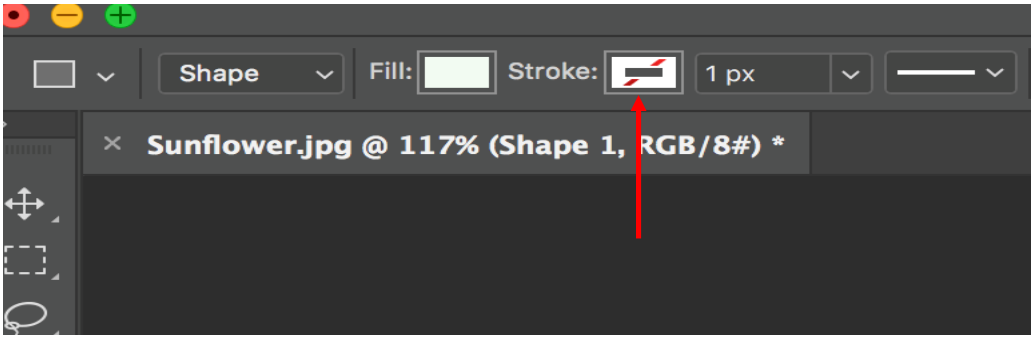
Click on Fill.



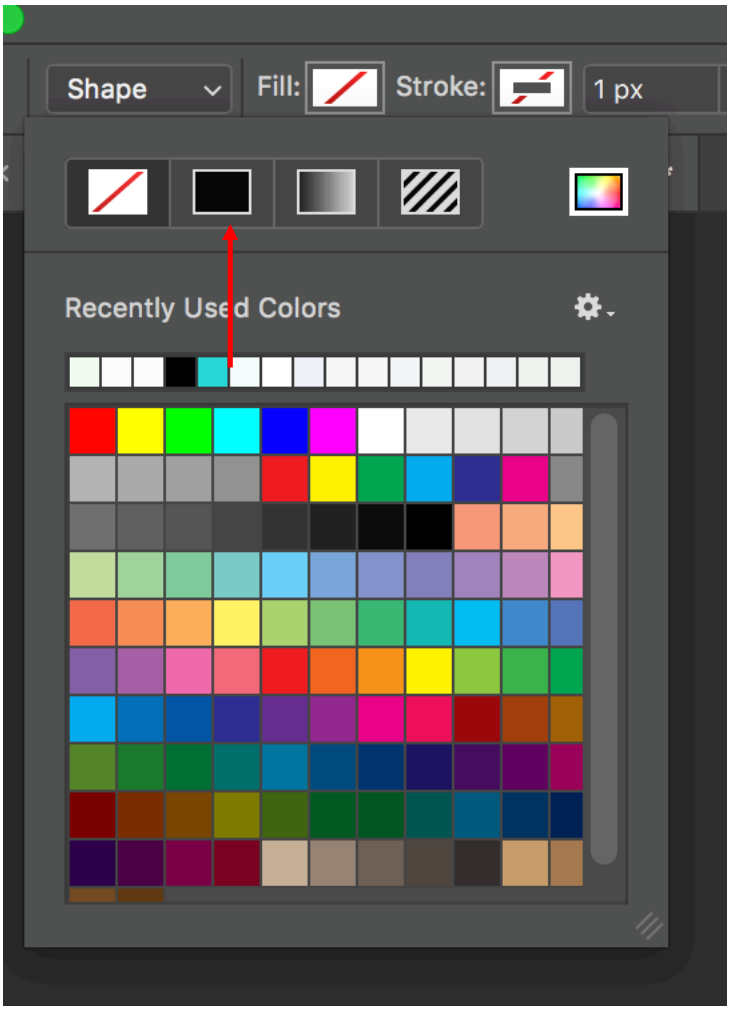
Click on No Color.



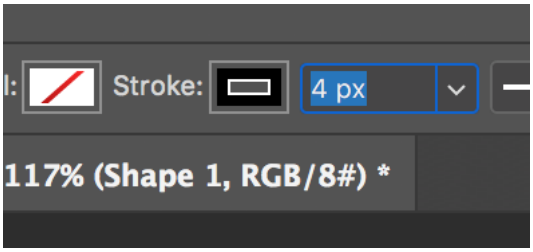
Click on Stroke.



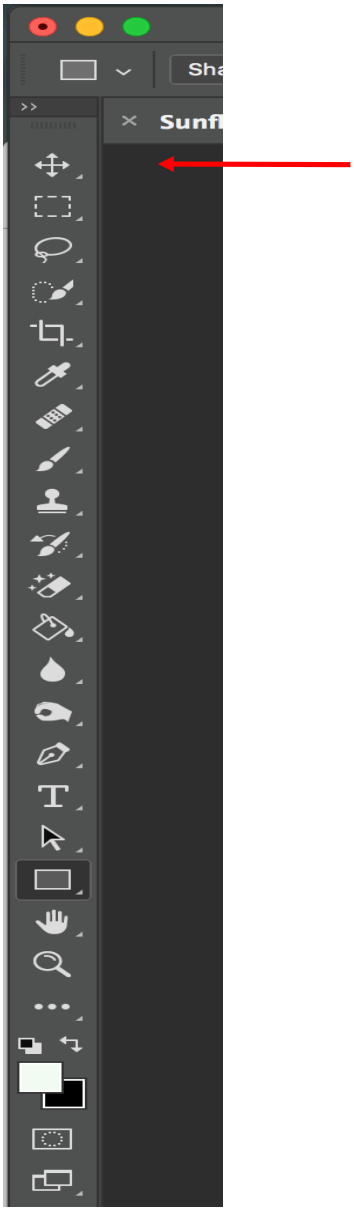
Click on Solid Color. Make it Black.



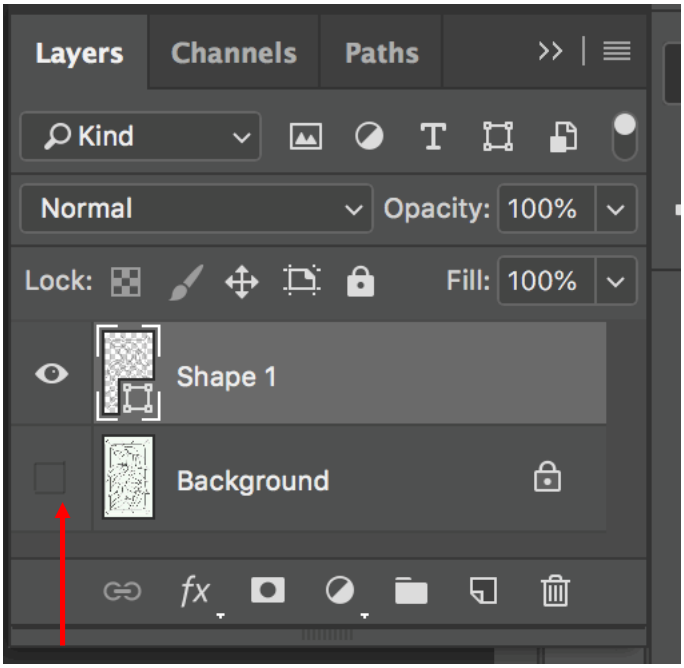
Set Stroke Width to 4.



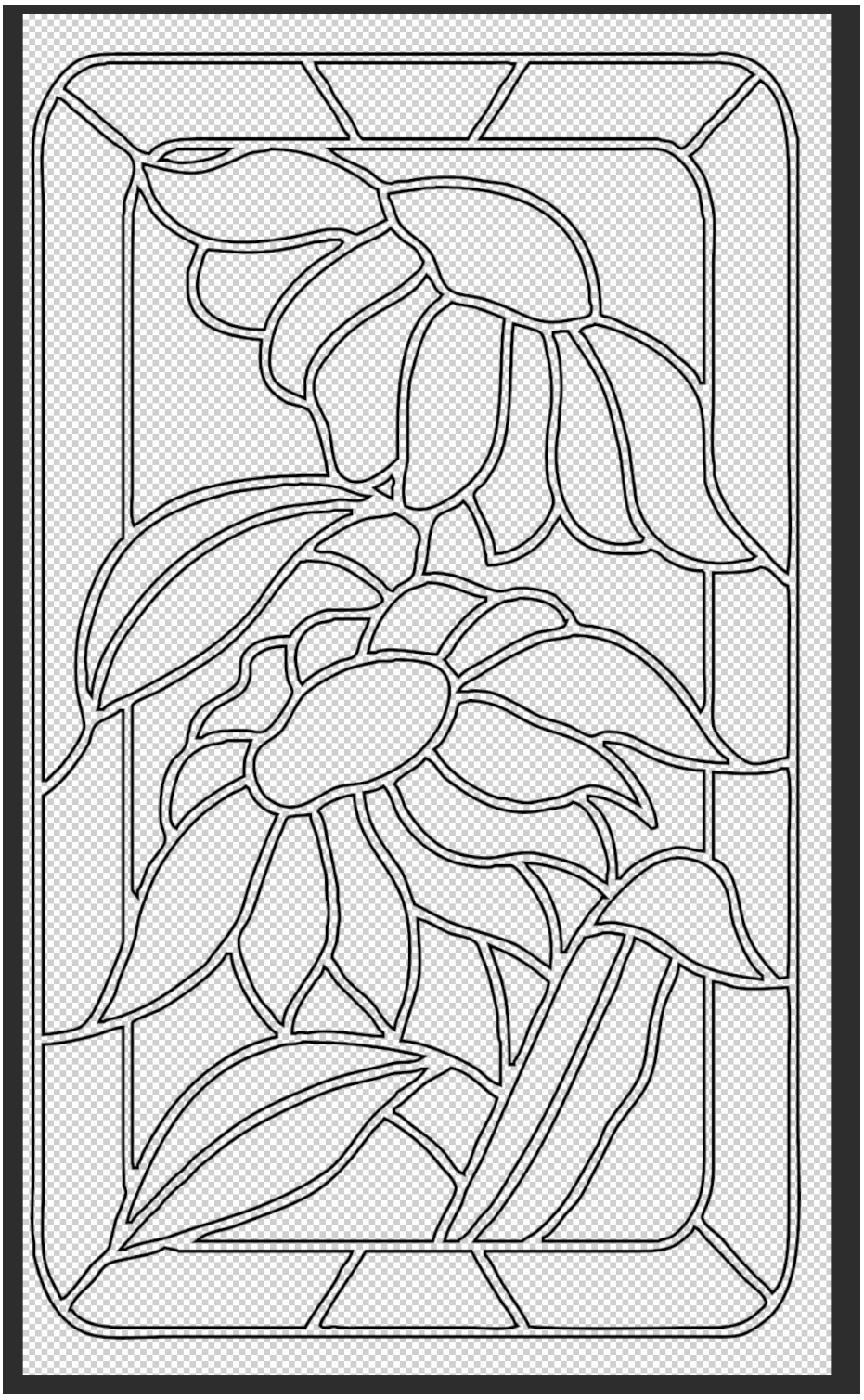
Select the Move Tool.



Hide the Background Layer.



This is what the image should look like.



Save the image in JPG format.

Illustrator

In Illustrator open the image that you saved in Photoshop.

Select All

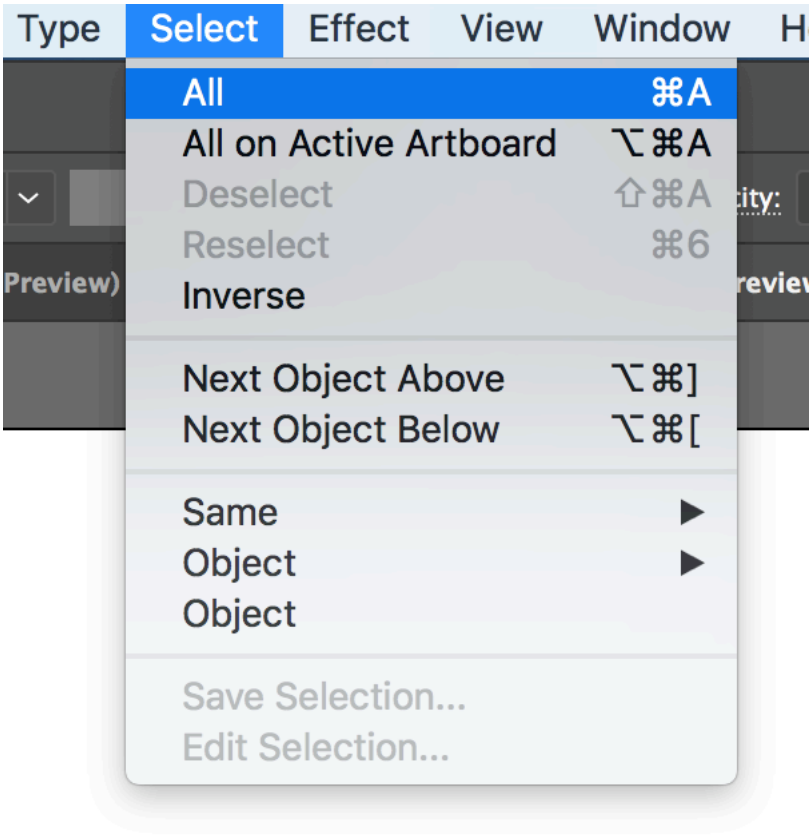
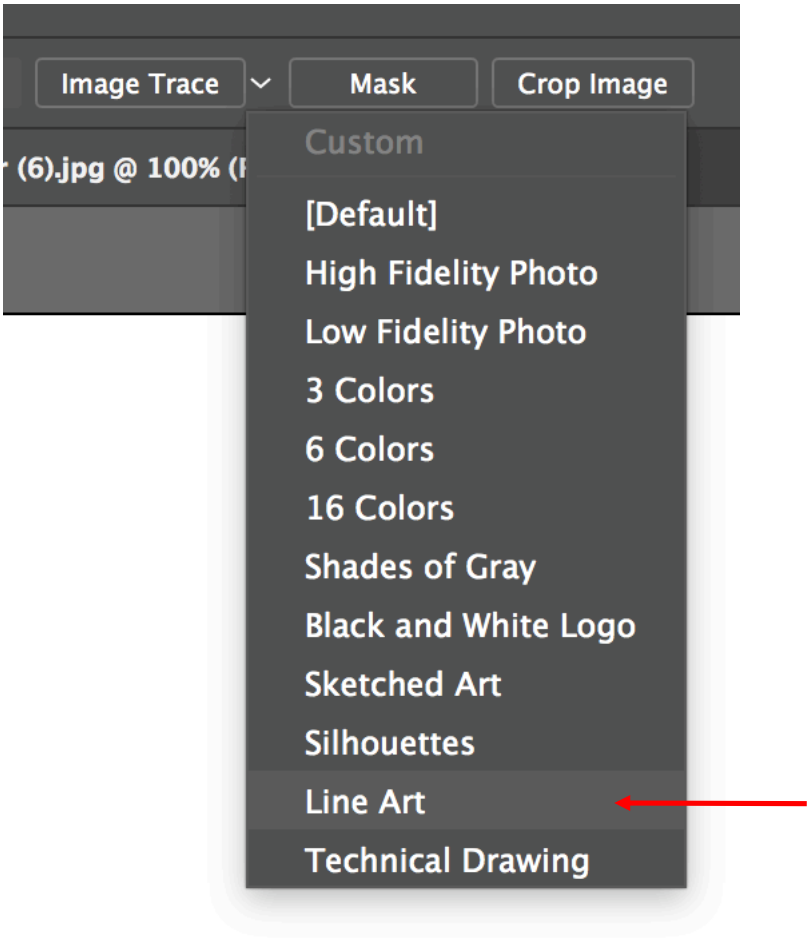
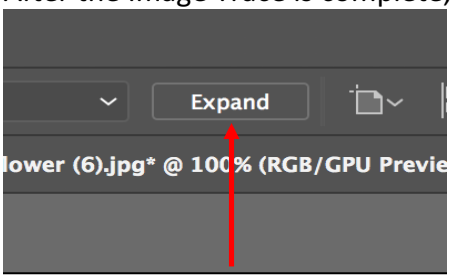


Image Trace

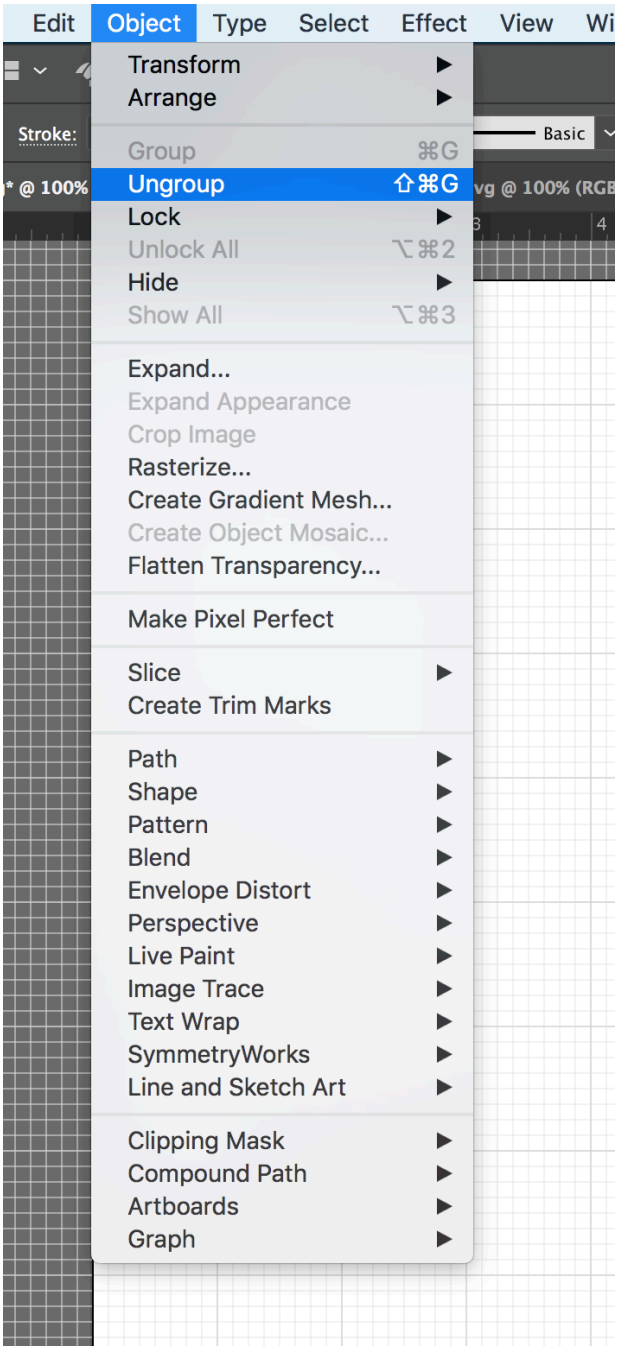
Select Image Trace Line Art.



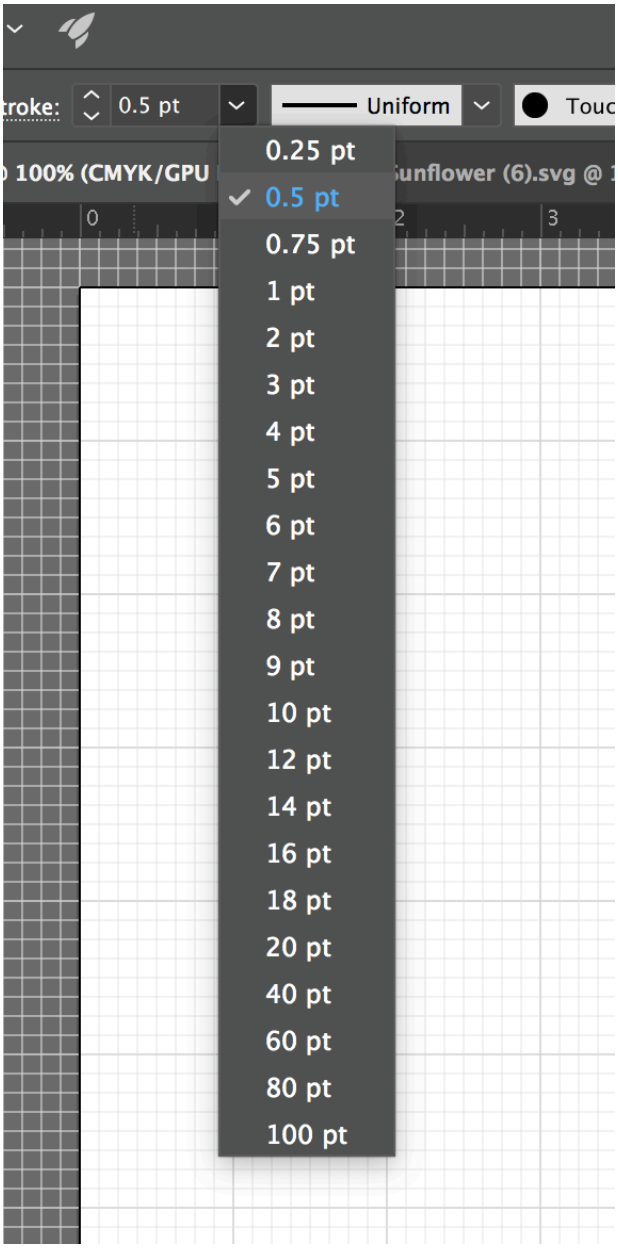
After the Image Trace is complete, select Expand.



Select Ungroup.



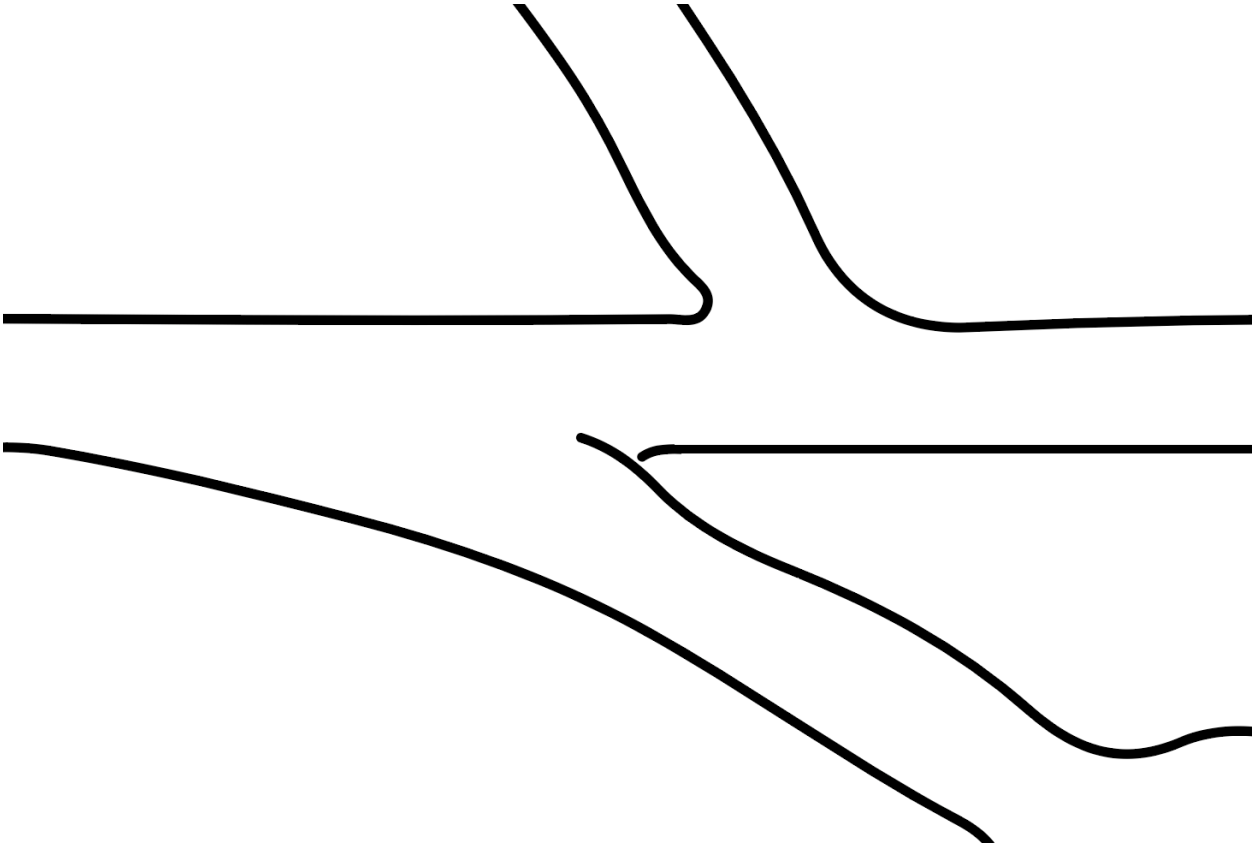
Set Stroke Width to 0.5



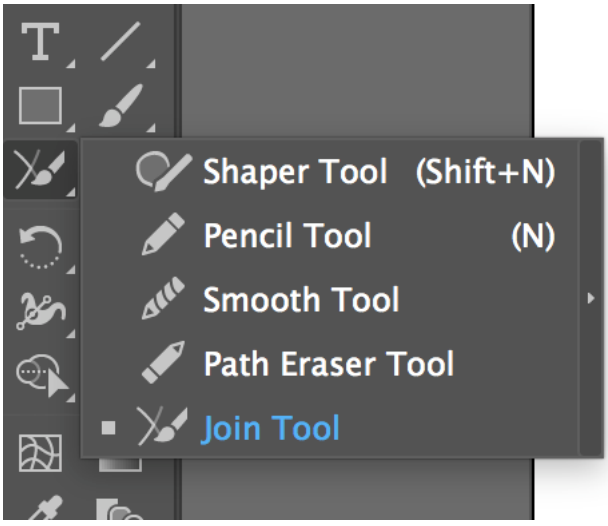
Save in SVG format.

Fixing Incomplete Paths

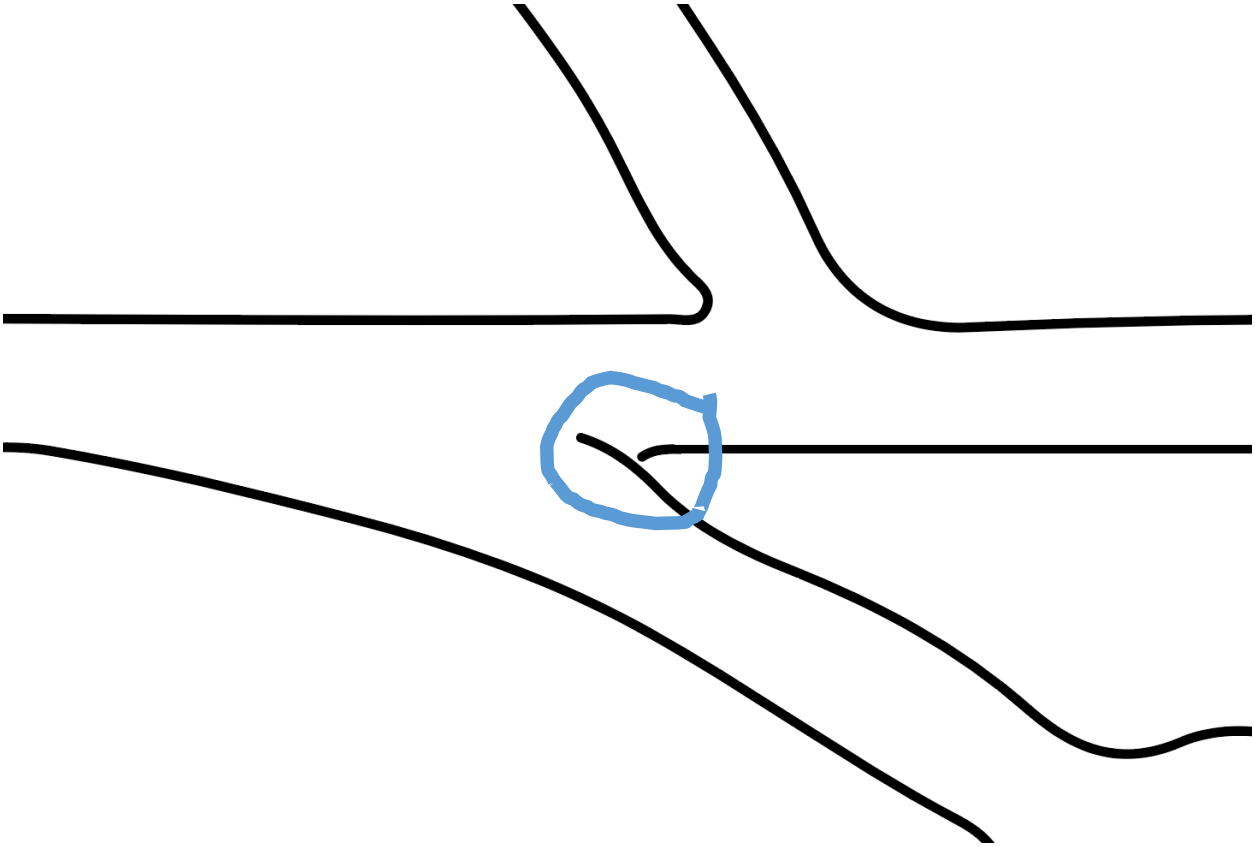
If you enlarge the image, there may be incomplete paths.



Select the Join Tool.



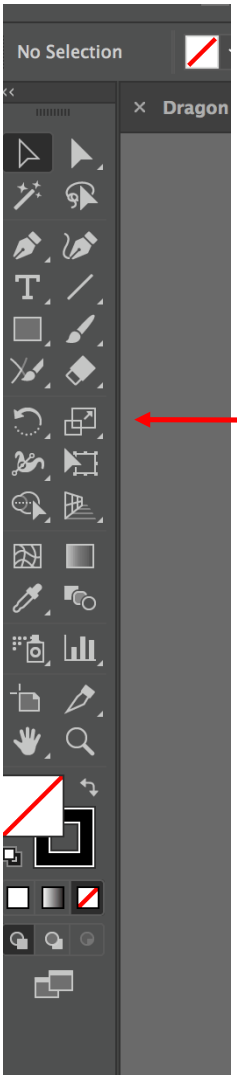
Using the Join Tool draw a circle around the incomplete path.



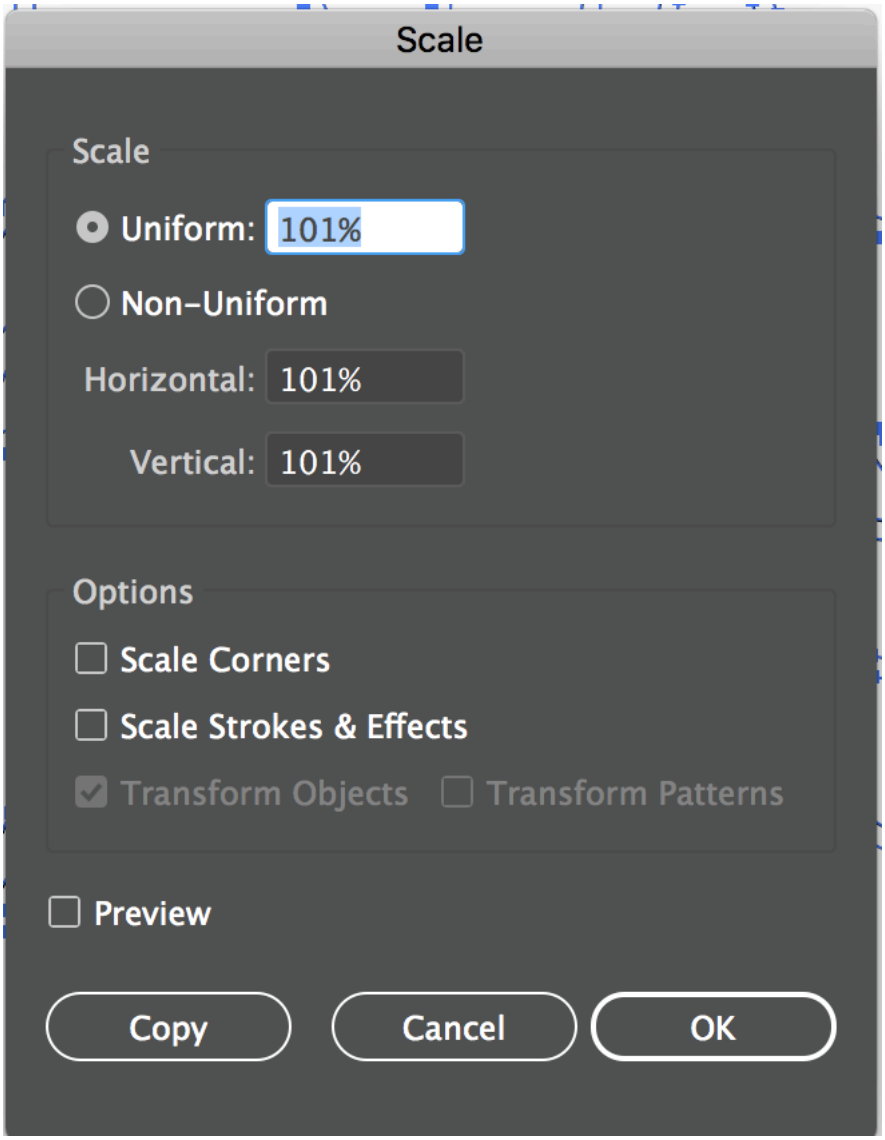
The Join Tool will complete the path. If the path does not complete, try enlarging the image and try again.

Creating the Inserts.

Select the image and Double Click on the Scale Tool.

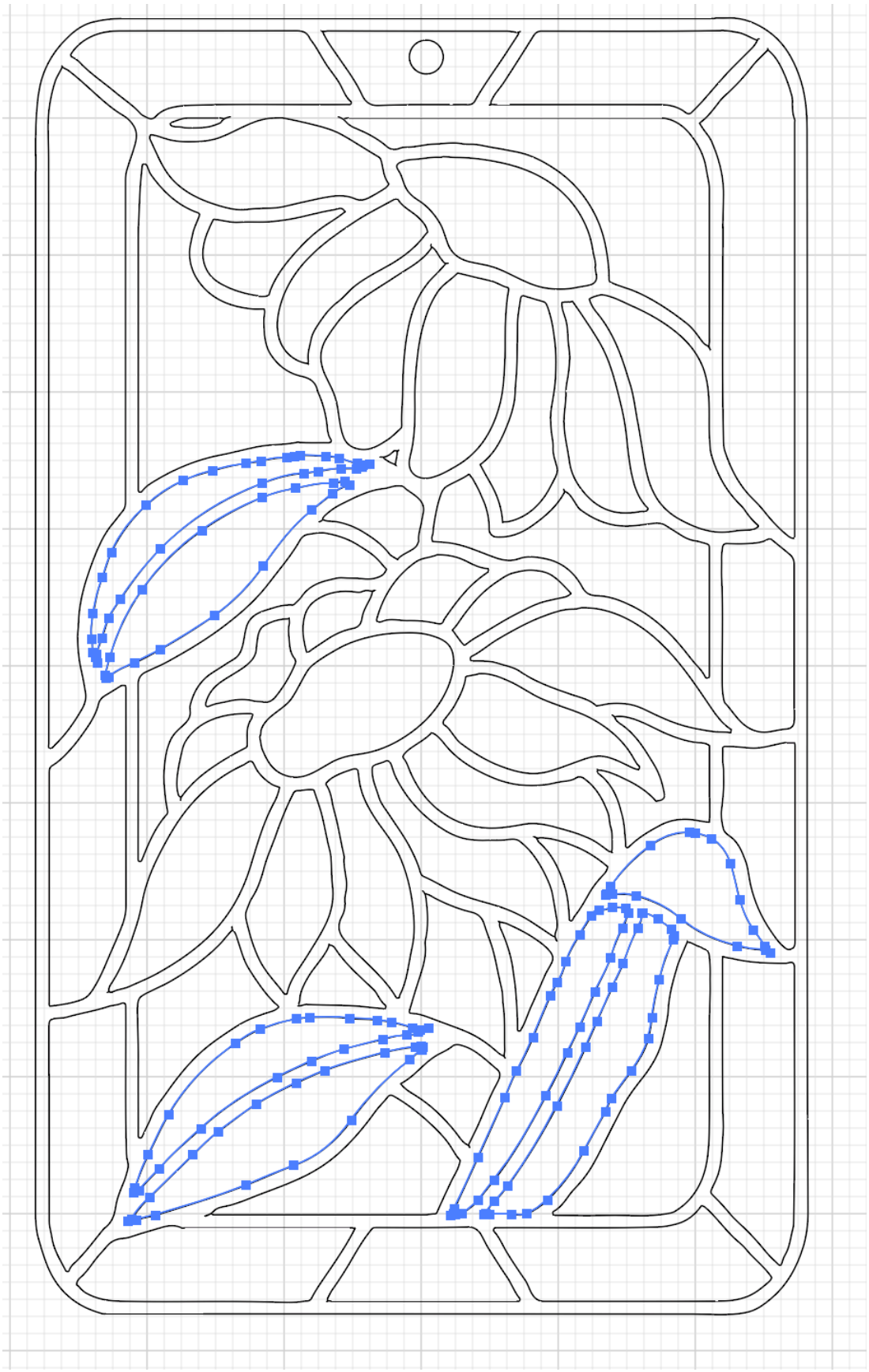


Increase the image size by 1%.

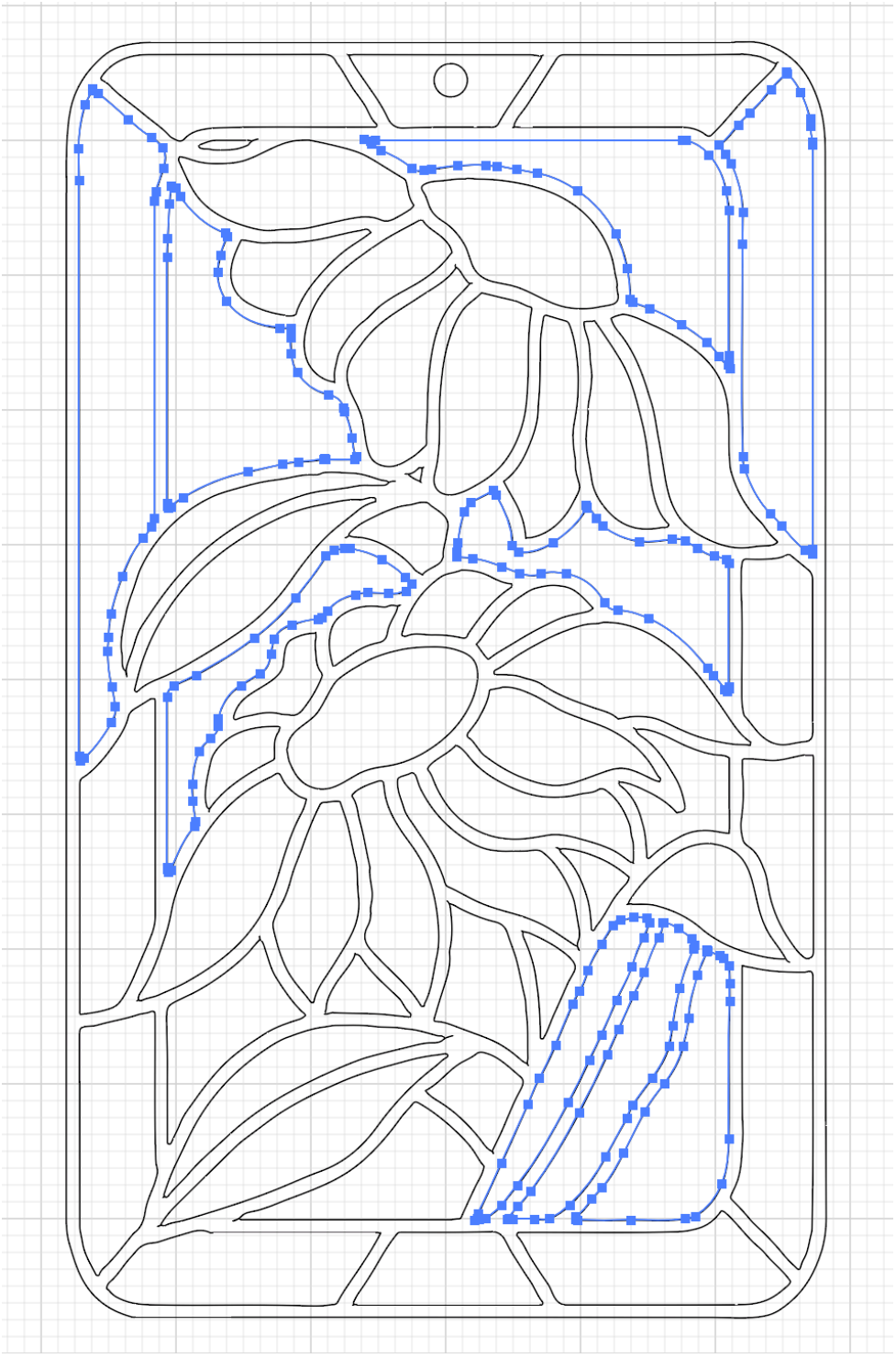


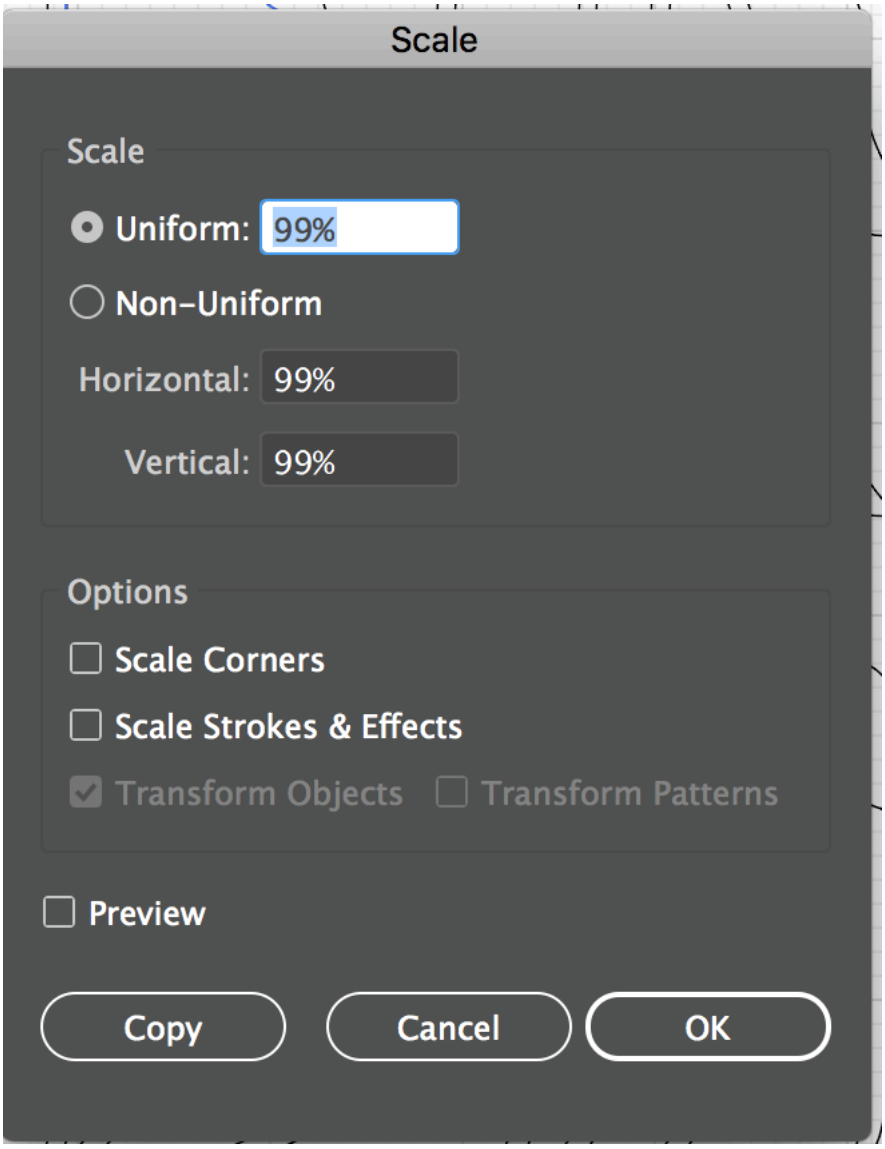
Save the image in SVG format with a unique name. (Sunflower 1%.svg)

Create a new Artboard.
Go back to Sunflower 1%, and select a group of inserts. Below I selected all of the leaves.
Cut them from the image (Ctrl X), and paste them into the new Artboard.
Save with a unique name (Leaves.svg).
Delete the inserts from the new artboard.
Go back to Sunflower 1% and select another group of inserts. Continue the above steps until all of the inserts are in separate files.
When all of the inserts have been removed from Sunflower 1%, the remaining piece is the outline of the image. Save this as (Sunflower Outline.svg).



For the most part increasing the size of the image by 1% is fine for most inserts, however larger inserts become a little too large. Reduce the size of the larger inserts by 1%.
Below I selected the larger parts and reduced their size.





Cut the frame from plywood. I have found that MDF is a little too weak.
Most inserts will fit just fine. However, you may have to tap a few into place.