BEAM
BE A MAKER

Laser Cutter Resources
Beginner Project – Puzzle

Objectives:

Using an online SVG generator

Image tracing a rastered graphic

Also all the objectives from keychain and trinket box projects

Accompanying Documents/Links:

<http://www.wolfiesden.com/Laser/PuzzleCreator.asp>

Or

<https://cdn.rawgit.com/Draradech/35d36347312ca6d0887aa7d55f366e30/raw/b04cf9cd63a59571910cb226226ce2b3ed46af46/jigsaw.html>

Materials Required:

Plywood – either 1/8" or 1/4"

Optional: Cardboard
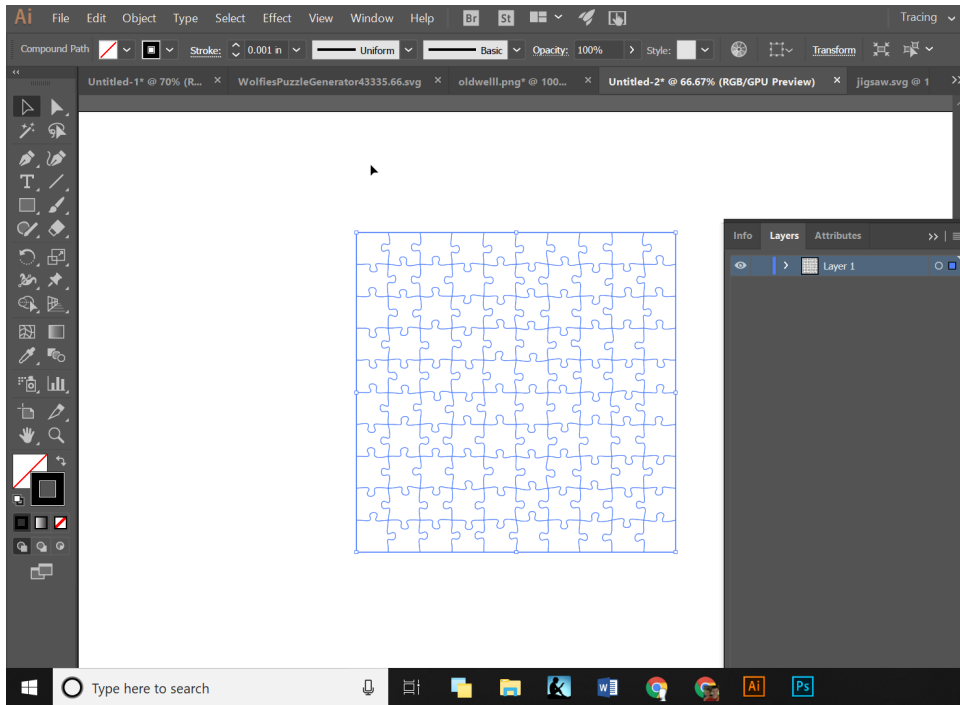
V1 – 8–28–2018

Step by Step:

1. Prep: Determine the size puzzle you'd like to make. We'd suggest not going smaller than 200mm/10 puzzle pieces in either dimension so that the pieces are not too fragile to handle. At that size each puzzle piece would be a bit under an inch each. Also, choose a picture to put on the back of your puzzle!

2. Input your dimensions into the puzzle generator, and export the resulting SVG to your computer. Two puzzle generators are provided in the links, and you can choose either depending on your preferences.
   a. Wolfie's Puzzle Generator is more user friendly and has more features, but the size that you input into the width and height fields produces a SVG that is approximately 30% larger (You can always scale this down to the values you'd originally put in, though).
   b. The Jigsaw Puzzle app is a little less intuitive, but the SVG that the app returns is the size you specify.
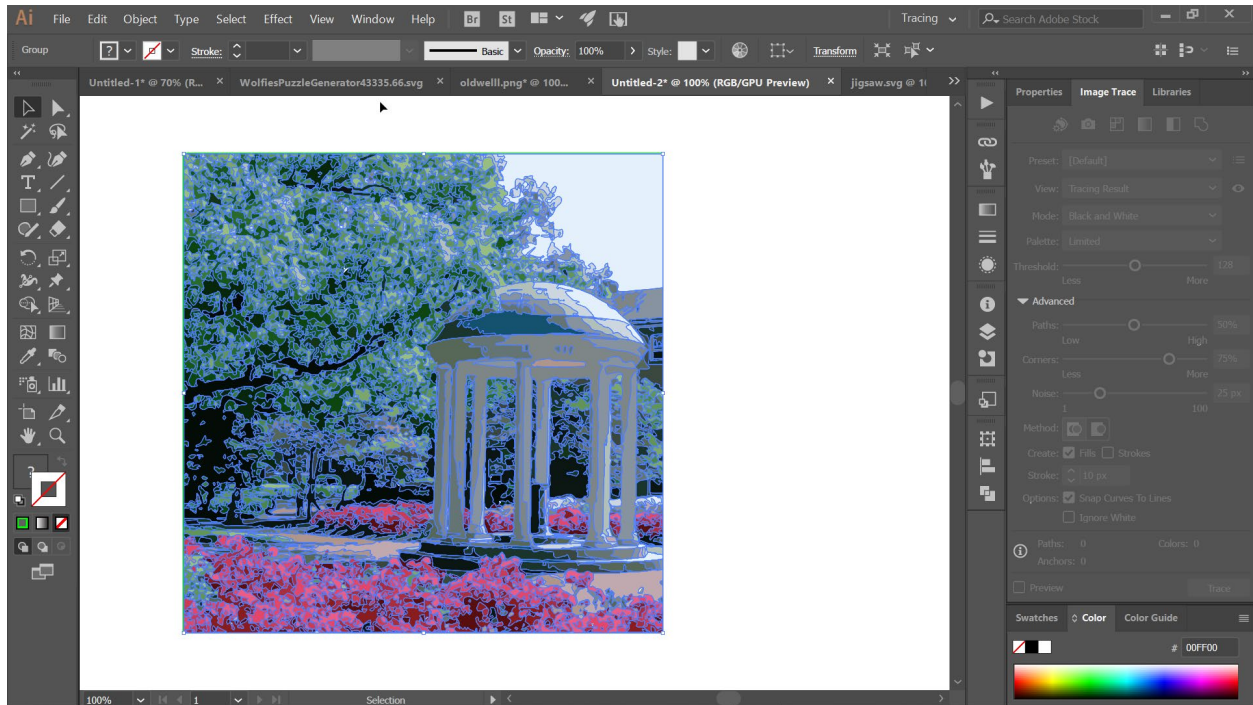
3. Make an Illustrator document with dimensions to fit the laser cutter, then place the puzzle SVG into your document, and make sure it's sized correctly (whether this means scaling or just verifying the size).
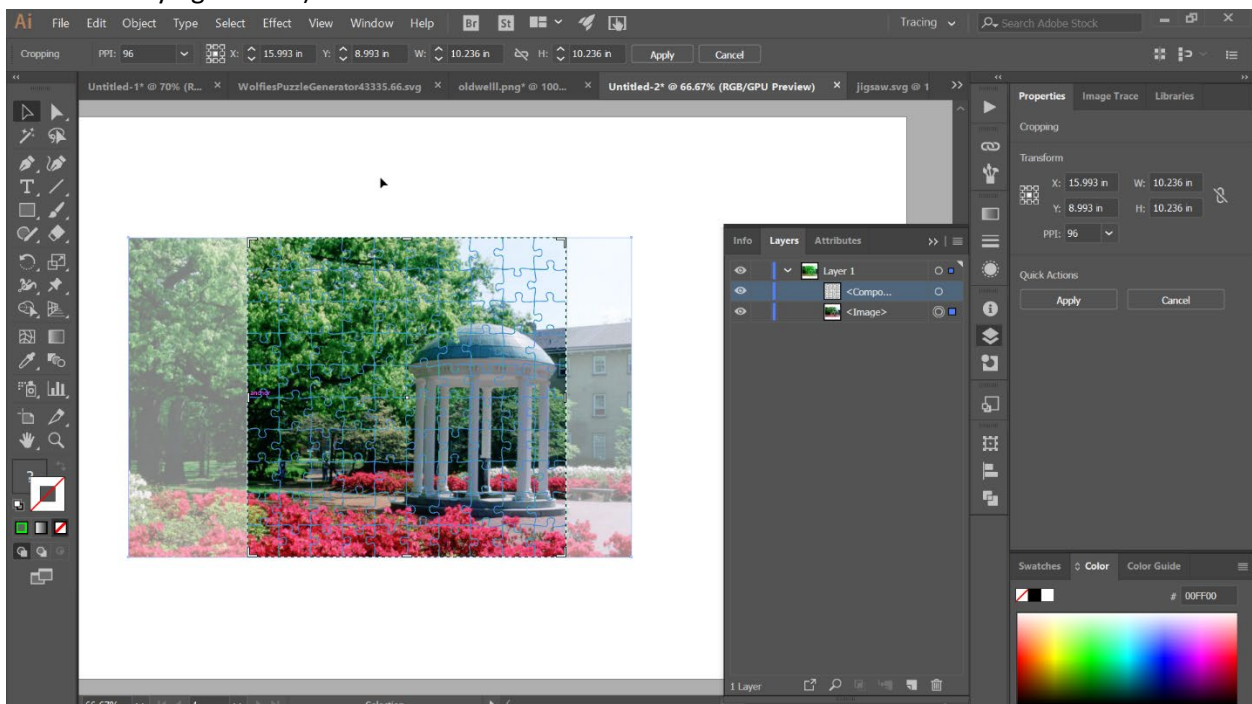

4. Place your image into the document, then select it. Crop/resize the picture to the size of your puzzle. Ideally you wouldn't have to scale up the picture to do this, but one way to help keep the relative quality of your picture is to Image Trace the picture so it'll scale up as vectors.

   a. To open up the full dialogue box for Image Tracing go to Window, Image Trace. Explore the options in the box until you've gotten the visual look you want. Then hit "Expand" to finalize your selections and turn the image into a collection of vectors. If you'd prefer to go back to the image you can press undo until it is an image when the file is selected.
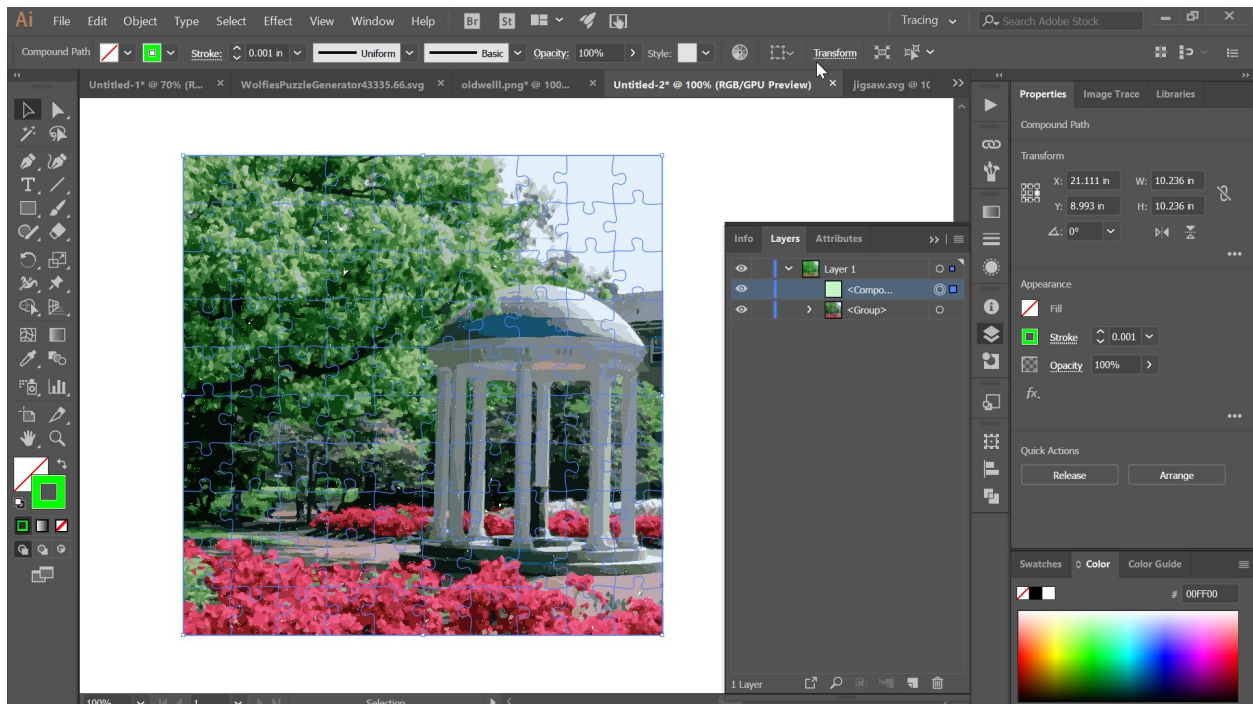
5. Go back to the SVG you imported in step 4, and move the group above the image/trace you've just created. Group these two pieces together, so it can be moved around as a piece.

6. Compare your puzzle dimensions to that of the scrap pieces, then locate an appropriate piece of material, then move your puzzle to that location in your Illustrator file.
7. Cut out your file! Remember to choose appropriate settings and focus the laser. You can write down your settings here, if you'd like:

> Red: _____Green: _____
> Blue: _____ Cyan: _____
> Magenta: _____ Black: _____
> Yellow: _____Orange: _____
> Don't forget to hit "Set" after inputting the values for each color!

We'd also suggest running a small version of your image to make sure that the settings give you a good laser cut result before you cut the large version of your puzzle.

(In making this puzzle we didn't test the settings, so the old well puzzle is unsolvable because the contrast is too low.)

8. Scatter the pieces and enjoy!

Upgrade your project!

Make a border around your initial design, then cut out a back piece that size out of cardboard. If you glue the cardboard and border together, you've got a nice flat area to put the puzzle together in, regardless of your location.