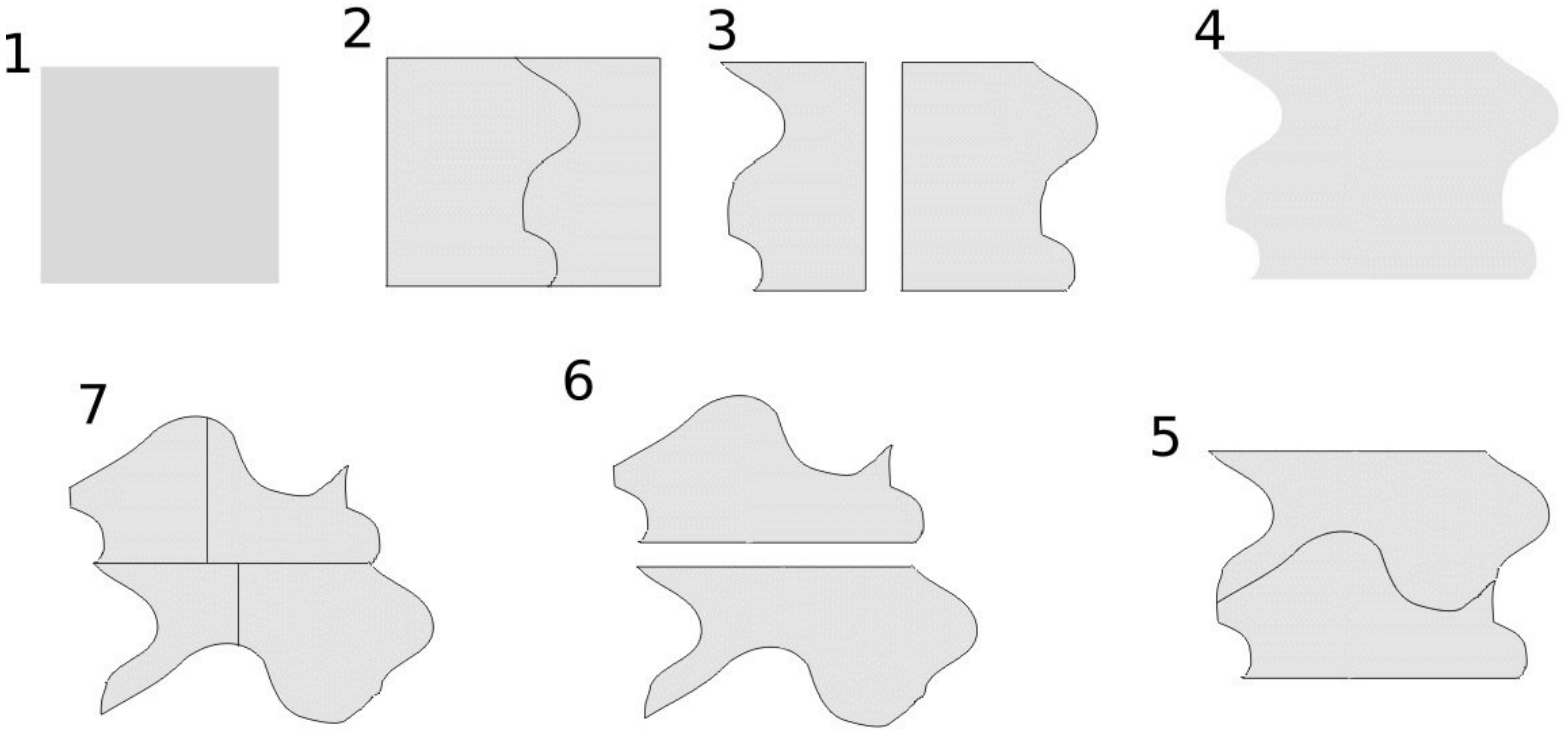
baldwindream

Tesselations in Gravit.io

A step by step guide to creating tesselations in Gravit.io, so that the final product is laser cuttable.

Written By: Mr. Barnes



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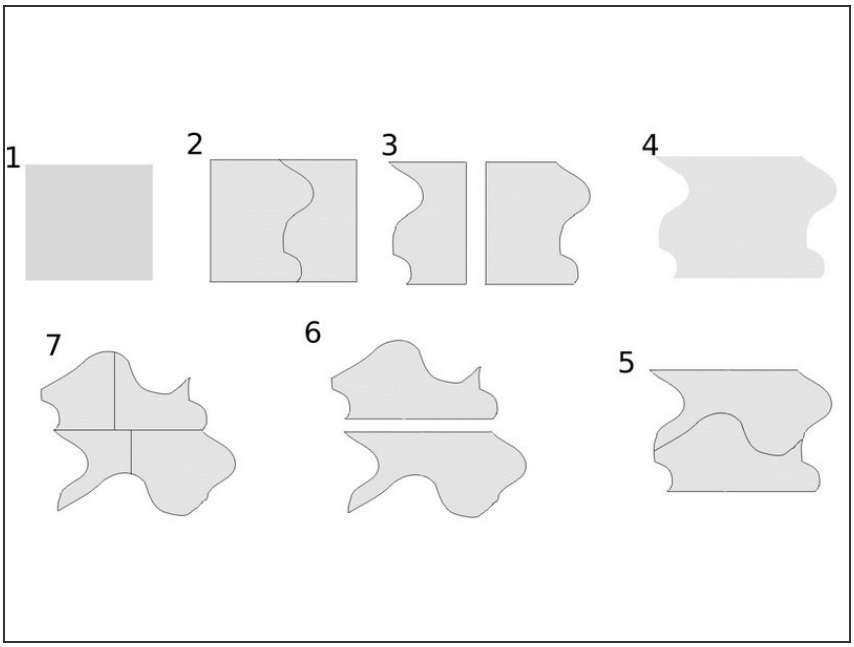
TOOLS:

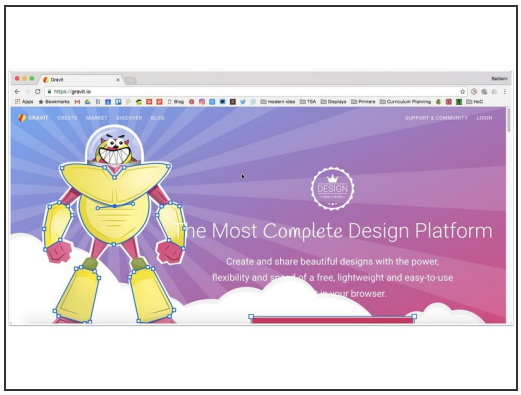
- Gravit (1)

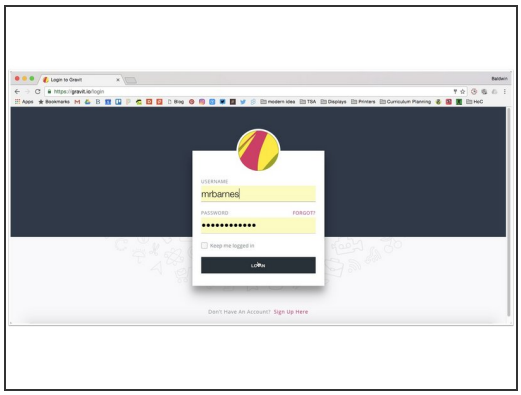
Step 1 — An Overview

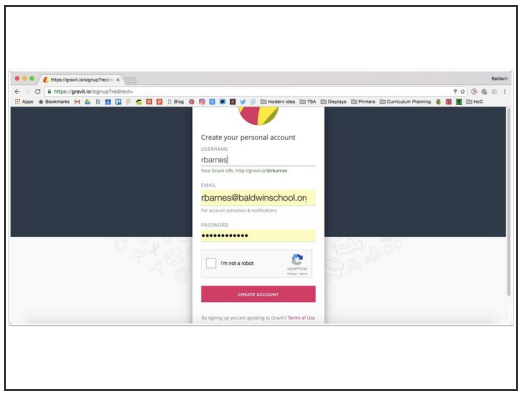


- We will be creating tesselations using a very simple process. Understanding this process will make doing the digital design much easier.
- Start with a square or a rectangle. Make a cut from one side to another to make two parts.
- Join these parts back together along their flat edge.
- Cut a second time across this new piece in the other direction.
- Join these two pieces back into one along the flat edge.
- Feel free to try this process with a notecard and tape before doing the digital version in Gravit.io.

Step 2 — Login to Gravit.io, or create an account.

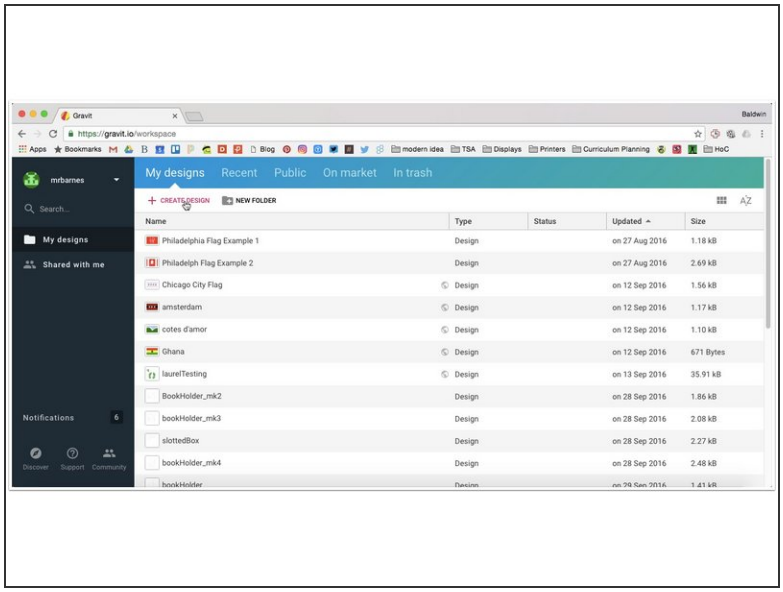


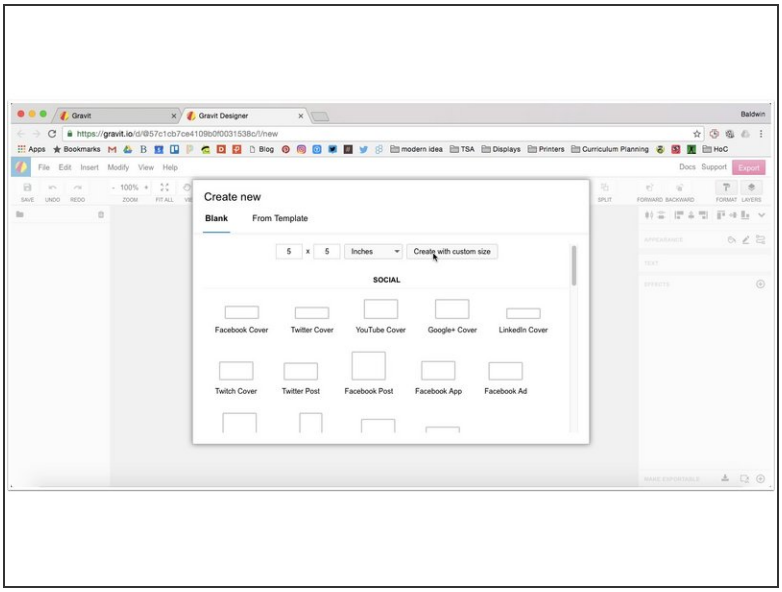




- Login to Gravit using your username and password.
- If you do not have an account, make an account using your Baldwin username, email and any password you would like to use.

Step 3 — Create A New Design





- Hit the 'Create Design' button after logging in.
- Use the custom size dialog to make the size 5 by 5 inches. **Be sure you change the dimension to inches!**
- Hit the Create with Custom Size button.

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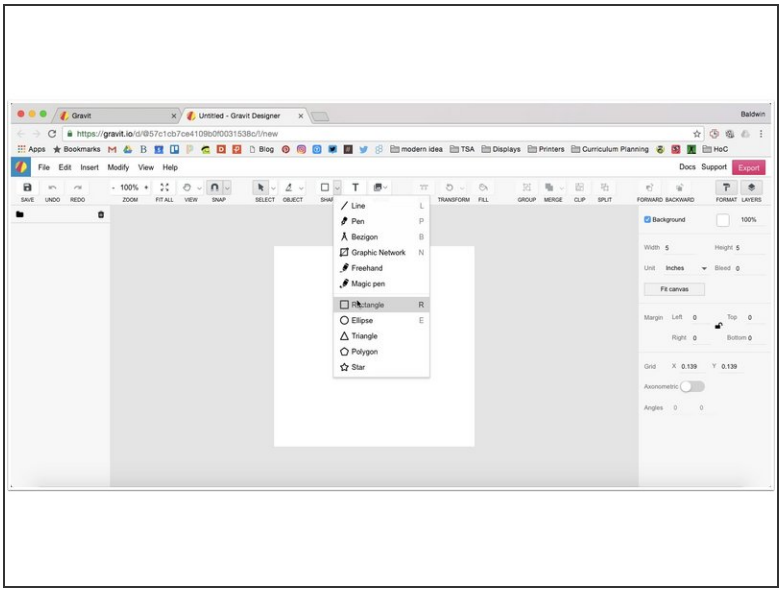
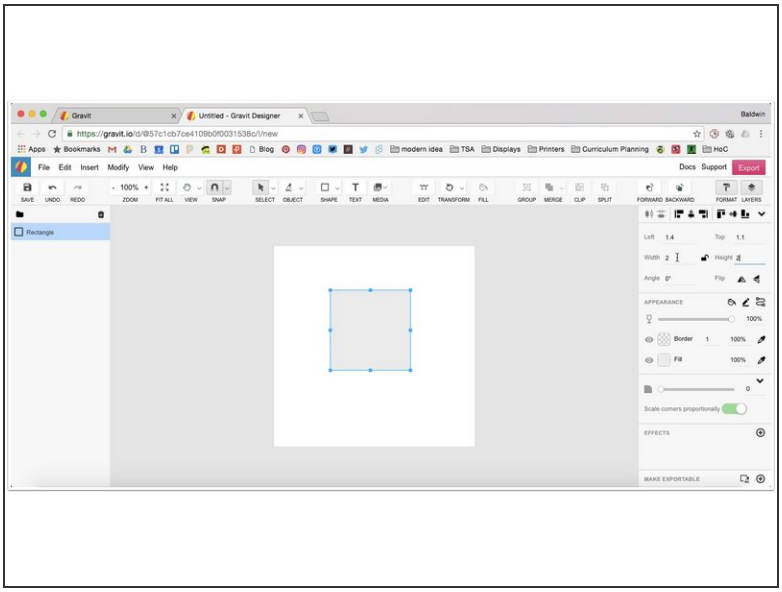
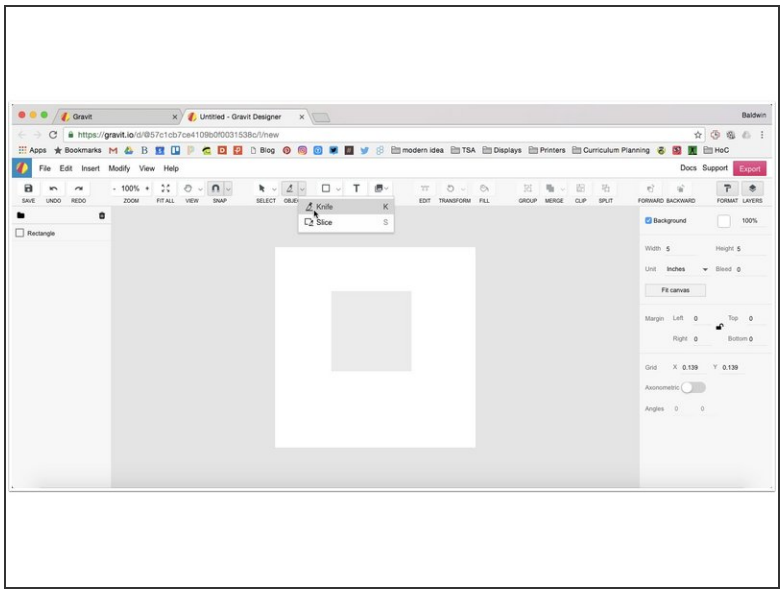
Step 4 — Create a square

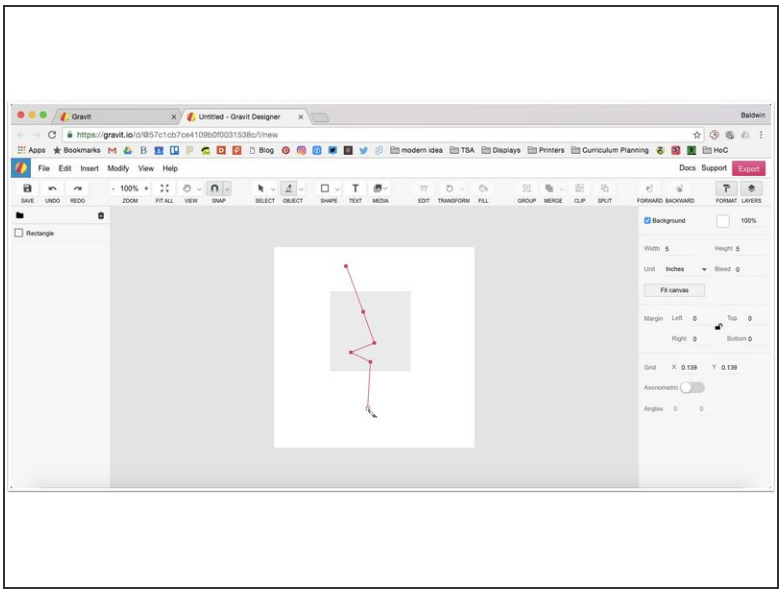




- Use the rectangle tool to make a square of 2"x2".
- Find the rectangle tool in the SHAPES tap, or use the R key.
- Click in the first corner, than drag to the second corner to create the square.
- Use the inspector sidebar to change the width and height to 2.

Step 5 — Make the First Cut





- Use the knife tool to cut your square in half.
- Find the knife tool under the OBJECT tab, or use the K key.
- Hold down the ALT / OPTION key on your key board and click point to point to make the cut. Release ALT / OPTION to finish the cut. Try clicking and dragging to make curves.
- If you are not happy with your cut, feel free to undo using CMD+Z.
- **Keep your cuts simple. A crazy saw tooth pattern will cause the software to fail during the second cut.**

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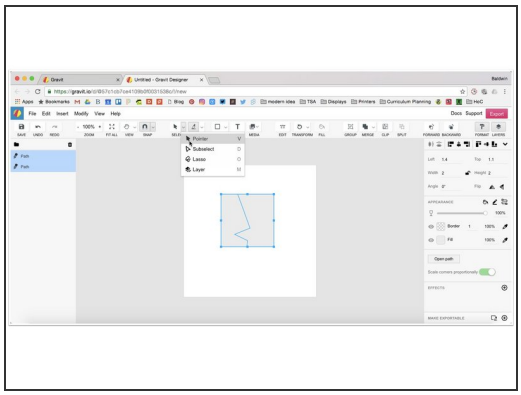
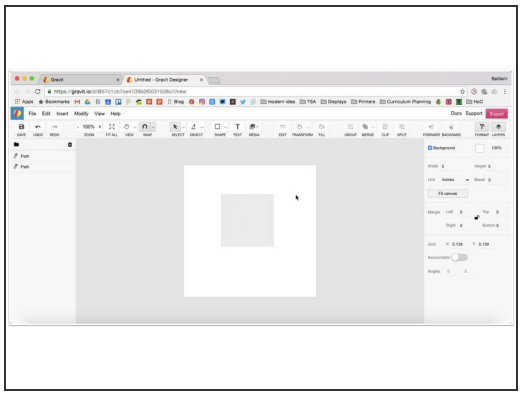
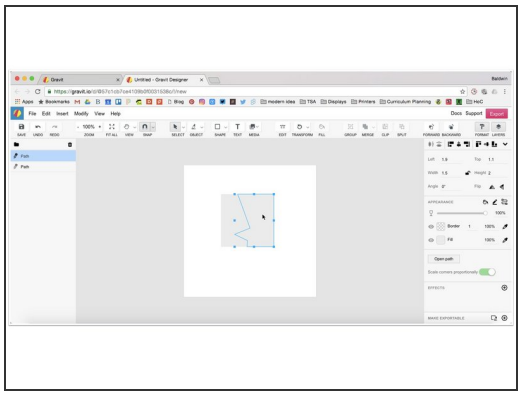
Step 6 — Select One Half of the Cut Square

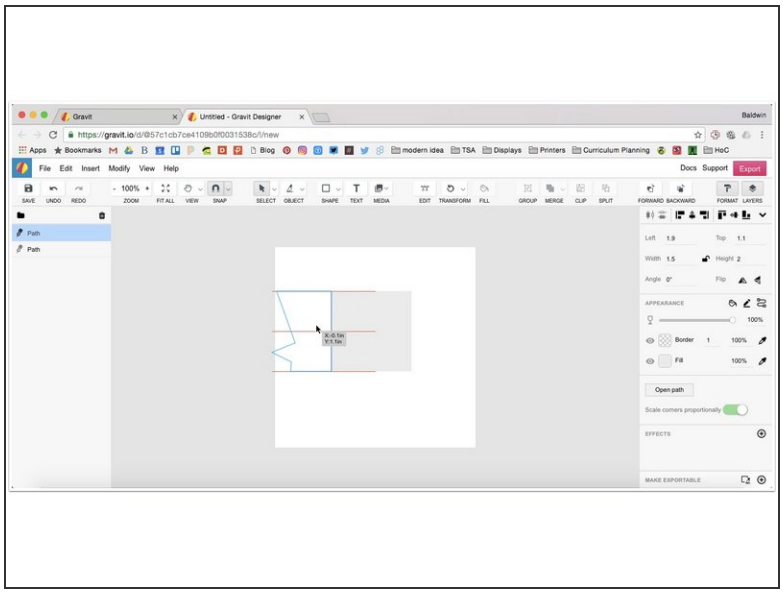


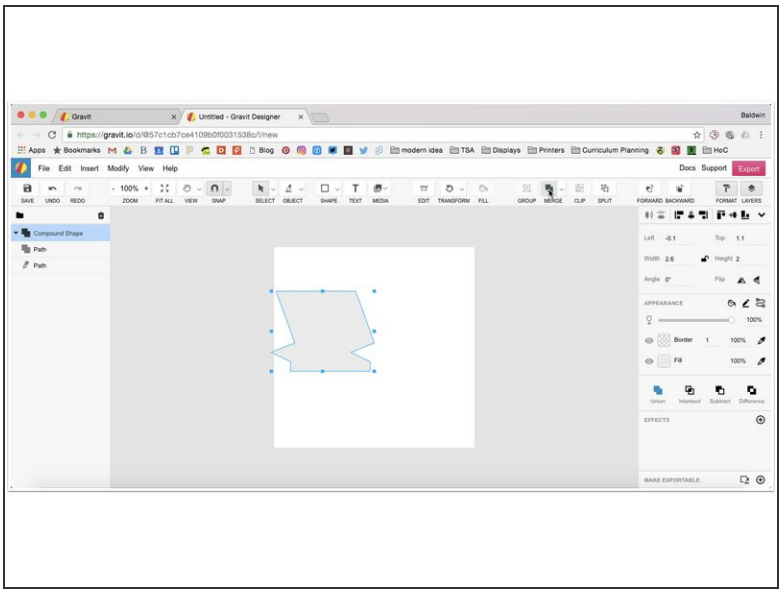




- First, choose the selection tool. Find it under the SELECT tab, or use the V key.
- Deselect the square by clicking anywhere away from the square.
- Select one side of the cut square by clicking on it.

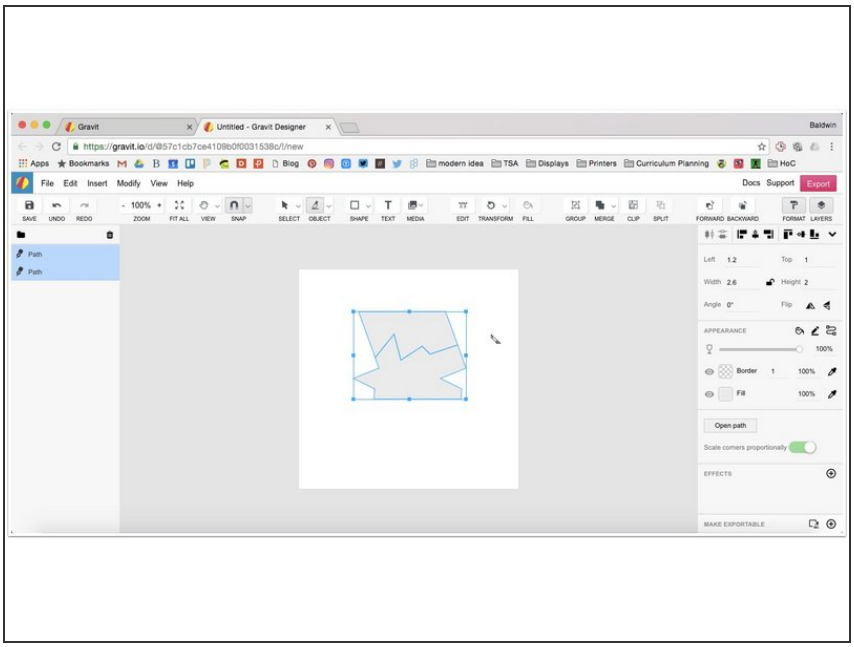
Step 7 — Move One Half & Merge





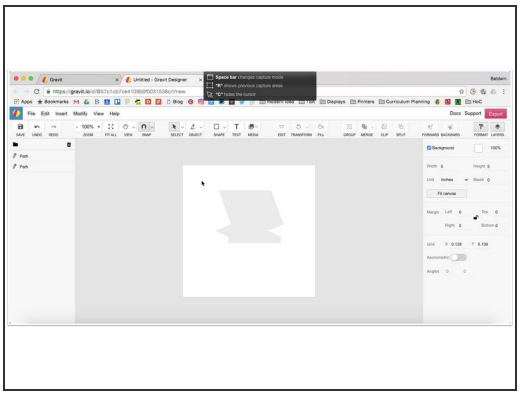
- Click and drag to move the one half to the other side, lining up their flat sides. It should snap into place.
- We need to nudge the this piece over a very tiny amount. Use the arrow key to push the piece into the other half. In this example, I pushed the right arrow key once.
- Select both piece by clicking and dragging over the two sides, or hitting CMD+A to select all.
- With both sides selected, hit the MERGE button to join these pieces into one.

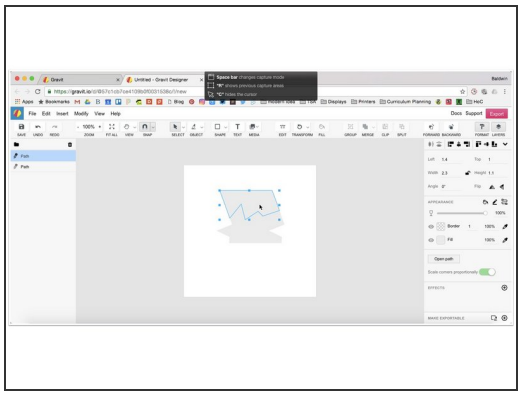
Step 8 — Make the second cut

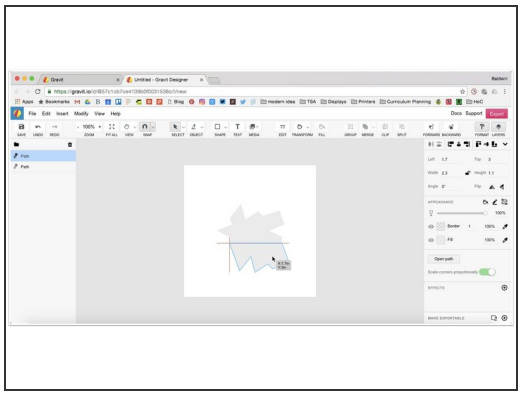


- Create a second cut in the opposite direction, maintaining the flat edge along to top and bottom.
- Use the knife tool, and hold down ALT and click point to point to create the cut, just as before. Release ALT to complete the cut.

Step 9 — Move and merge the second cut.







- Repeat the previous move and merge procedure.
- Deselect the square, than select one side.
- Click and drag to move the flat sides together.
- Nudge the piece into the other by using the arrow keys only once.
- Select all and merge the pieces into one.

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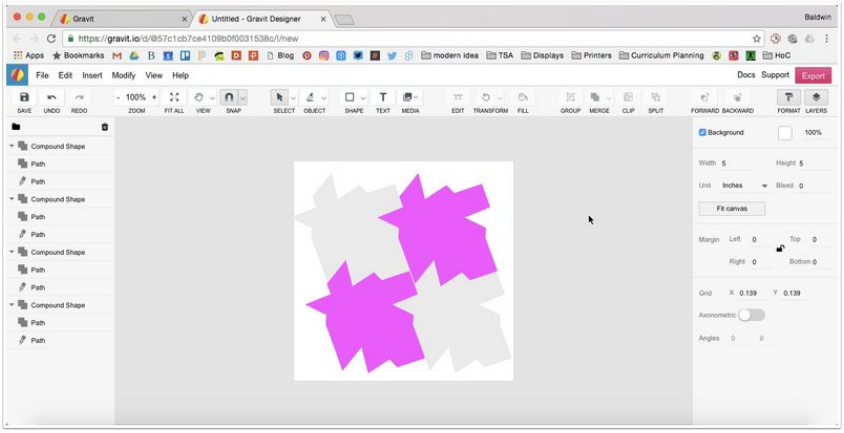
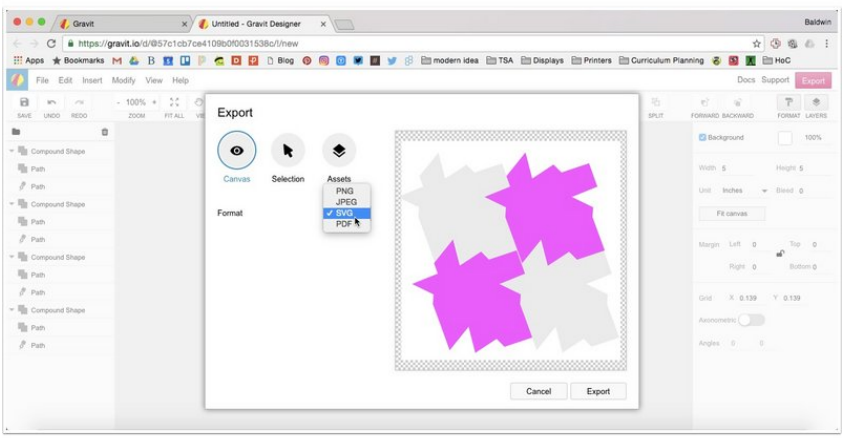
Step 10 — Make Copies & Tesselate



- Make copies, and change the fill color in the right sidebar. (CMD+C to copy and CMD+V to paste.)
- Each peice should tesselate with one another and snap into place.

Step 11 — Export for Submission



- First, lets make sure we save using the SAVE button or File > Save.
- Now, hit the EXPORT button in the top right.
- Make sure the 'Canvas' button is selected. (It should be selected by default.)
- Change the format from PNG to SVG for laser cutting.
- Hit the 'Export' button to download the file.
- Finally, submit this file to be laser cut!