

First Laser Design

Due: 4th period: Wednesday, midnight

3rd, 7th periods: Thursday, midnight

Today we're making a design in Gravit that I will laser cut out of cardboard. I'll assemble all of our creations together into a group and be able to see our group creation via photograph. Down the line I hope to arrange a pick-up time for those of your who are interested to come by to pick up items that we have created (3D printed, laser cut, etc.), but for the short run, I'll put things together and show you the results online.

Each student will make a square with their name on it, our class period, and an interesting design.

Here are the steps:

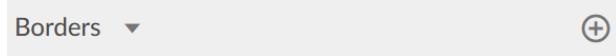
1. Go to Gravit Designer, open a new 8.5 x 11 US-Letter Portrait document.
2. Draw a rectangle.
3. Over to the right up near the top of the various controls, set the rectangle's size to 2.5 by 2.5 inches:




4. Turn off fill if the rectangle has fill turned on by clicking the little trash can next to the Fills setting. If there is no trash can, and fill color, and "Normal", etc. then there is already no fill enabled.



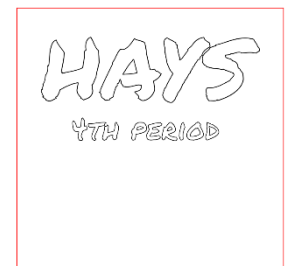
5. Turn on the border by clicking the + sign on the Borders control:



6. Set the border to the color red, and set the width to .5 pt.
7. Using the text tool, write your name (first or last, or both if you want; if you do both, do first, then hit enter, then hit last so your name is on two lines.)
8. Select your name text and change the font to something fun. There are a lot of fonts! You must choose something other than the default. If you are having trouble changing the font, watch my video where I show you how to do all of this. A link is at the bottom of these steps.
9. Change your name to a path using the Convert to Path tool: 
10. Hold the shift key down and resize your name so that it fits nicely in the square. Here is what mine looks like at this point:



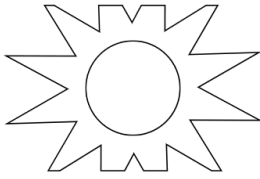
11. Select your name, turn off Fills, turn on the Border, set the border to .5 pt, black.
12. Using the text tool, write your class period, for example "4th period". You may change the font to something else if you want. Convert to a path. Hold down the shift key and drag a re-size handle to make the period larger that it was, but smaller than your name. Turn off Fills, turn on the Border, set it to black and .5 pt. Drag it over onto your project as shown here to the right.



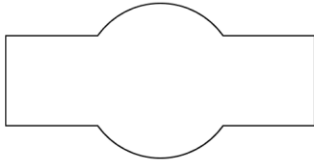
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13. The last requirement is that you add a shape or design of some kind that uses two or more of the built-in shapes. Turn the Fill off and set the Border to .5 pt black.

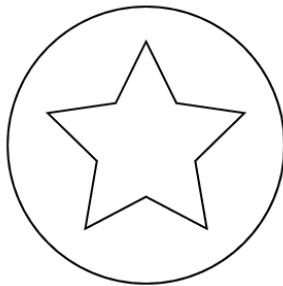
I used a star and a rectangle and a circle to create this:



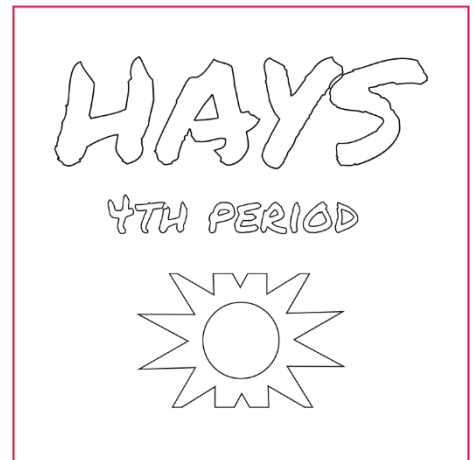
Here is an interesting image you can make using the Union function and a rectangle and a circle:



You don't have to get super fancy, but you need to use at least two shapes. You can keep it simple and just put a shape inside of another shape like this:



14. Use the center tool to make everything aligned by their centers. Here is my final creation:



15. Use the following as a checklist:
- The square is 2.5 inches tall and wide, and it has no Fill and its Border is .5 pt and red.
 - Your name is up top, pretty big, centered, with no Fill, and a .5 pt black border.
 - Your class period is next, smaller, and also no Fill, with a .5 pt black border.
 - You created or arranged a shape or design using two or more Gravit shapes. This creation has no Fill and a Border that is .5 pt and black.
 - Save your project. Call it your name and then "square". Save it in the Gravit cloud.

The red part (the square) is what the laser will actually cut. The black parts (everything else) are what the laser will engrave. That's how we control what happens on the laser, by the color of the object.

There are two steps to turning in this project:

- Get a Share link and turn it in on the Google Classroom for this assignment.
- Then go to the File menu in Gravit and choose Export>Scalable Vector Graphics. This will save a file in the format we can use on the laser cutter. On a Chromebook save it under "My Files", then switch to your Gmail and email it as an attachment to the laser cutter email address: laser.ahs@wscuhd.org

If you get stuck on anything, [check out this video](#) where I do the entire project.