

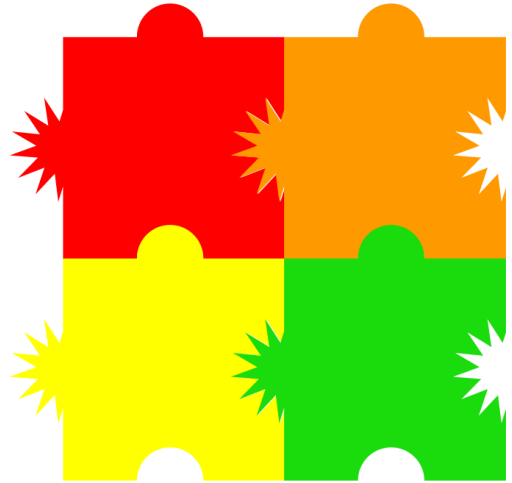
Puzzle piece Tessellation project

Project Make

Due: 4th period, Thursday 1/14/21 midnight
3rd, 7th, Friday 1/15/21 midnight

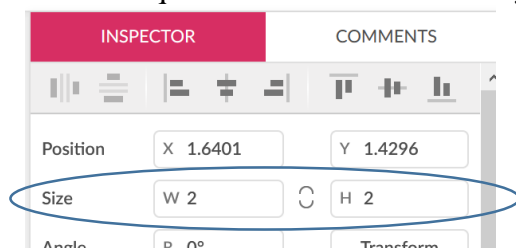
Today we're going to make a puzzle piece that tessellates like the image to the right. A tessellation is a shape which can be added to from top bottom left and right forever in every direction leaving no gaps. Imagine tiling a floor with tiles that looked like this; they would fit together in any direction as far as you needed to go.

If you need help, watch the video I posted on the Google Classroom where I do this entire project.

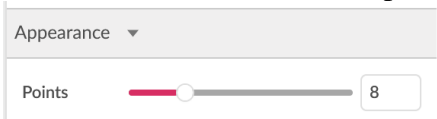


Follow these steps:

1. Open Gravit. Create a new project using an 8.5 by 11 inch template.
2. Create a square. Set it to be 2 inches by 2 inches:

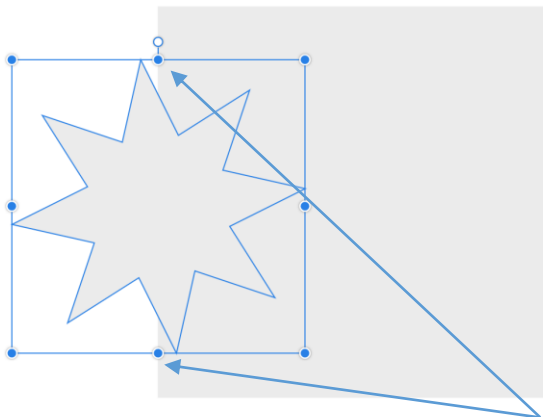


3. Draw a star. Give it at least 8 points.



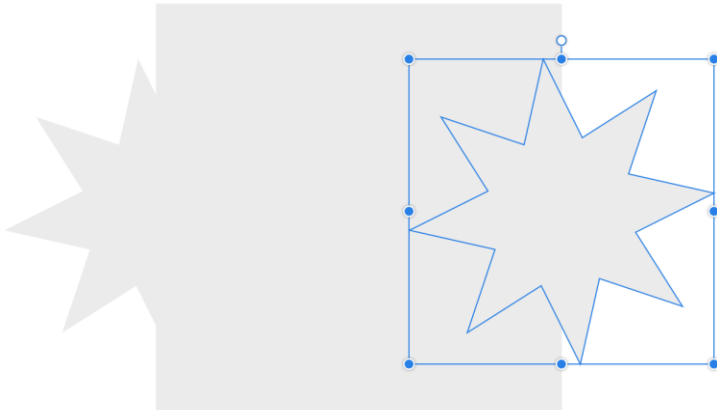
Size it so that it is 1.5 inches tall and 1.5 inches wide.

4. Drag the star so that it is centered left-right on the left side of the square like this:

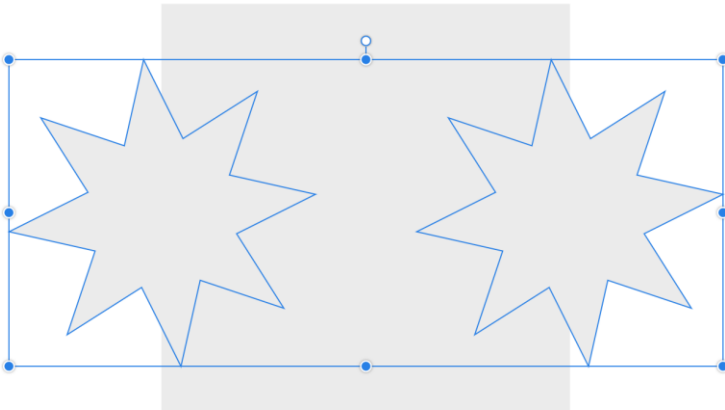



You can tell it's centered when the little drag dots above and below its center are right on the edge of the square.

5. Make a duplicate of the star and drag it over to the right side. Make sure it is exactly in the same position up and down compared with the first star, and then centered left-right on the right side just like the first star. This shows how left-right it is centered on the right edge of the square:




This shows how the two stars are lined up vertically (at exactly the same height on the square.):

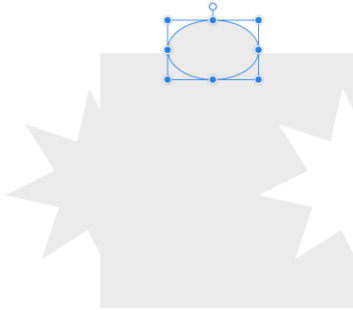


6. Now we do the magic. Click on just the square. Then shift click on the left star. Choose Union in the Create Compound Shape tool.  This joins the square and the left star as a single object.
7. With the new shape still selected, shift-click on the right star. This time in the Create Compound Shape tool choose "Subtract". This takes away the other half of the star, leaving a hole. You now should have something like this:



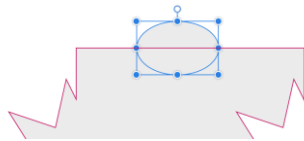
8. With the shape selected click on "Convert to Path" . We're more than halfway there. We'll do the top and bottoms next (see next page).

9. Use the ellipse tool to draw an ellipse that can easily fit along the top of your puzzle piece, something like this:

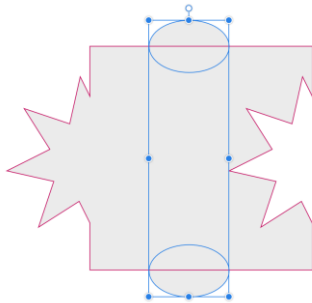



It can be a perfect circle, or an oval shape, it's your choice.

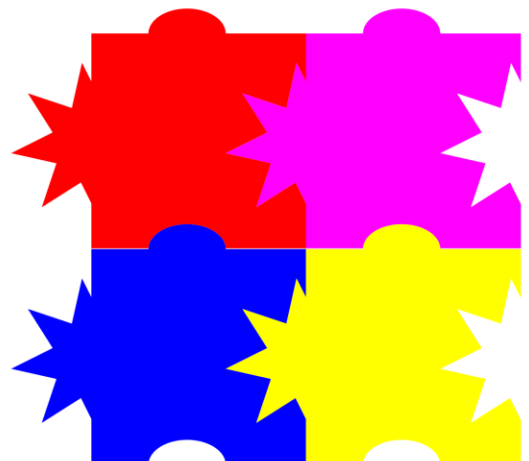
10. Like we did with the star, center it up-down on the drag dots, then make a copy and put it down below, also centered on the drag dots.



Make sure the two are lined up left-right also:




11. Select just the star/square shape, then shift click on the top ellipse, and choose Union.
12. Then shift click on the bottom ellipse and choose Subtract.
13. Click the Convert to Path tool  again to permanently join all the pieces together. You now have a single puzzle piece.
14. Make four copies total of the puzzle piece and arrange them as shown to the right, showing me that all the pieces line up properly. Change their colors so that each of the four is a different color.
15. Save your Gravit project to the Cloud. After you save it, click on the Share button on the far right. In the next window, make sure it looks something like this, then copy the link and turn that in on the Google classroom.



Share File

https://designer.gravit.io/?token=xVFOBhsJ4qRa-kZ_MysMKtTAESwulsU

 COPY

 Everybody with the link:

Viewer ▾