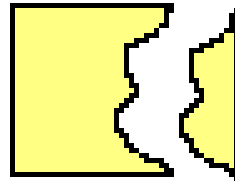
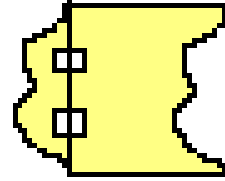


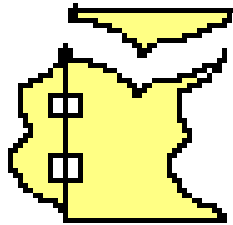
square



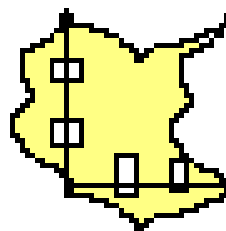
cut one side



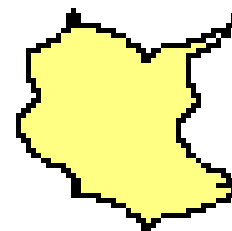
tape to opposite side



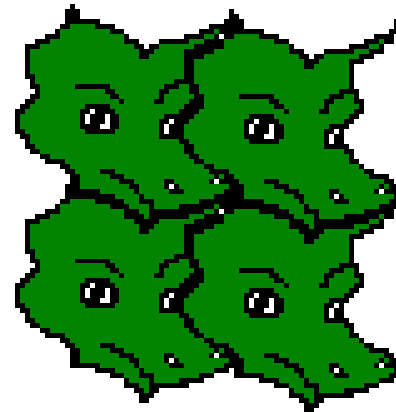
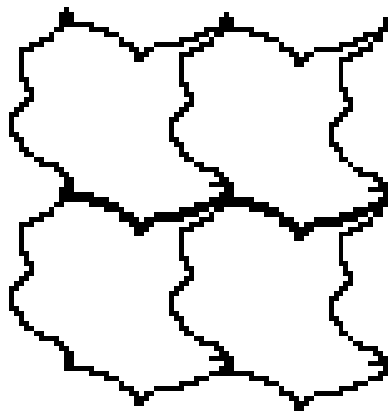
cut second plain side

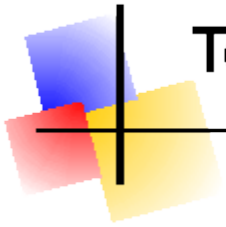


tape to opposite side



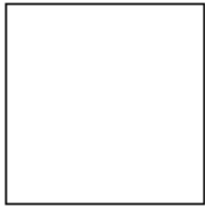
A tessellating shape is formed





Tessellations

(Translation Method)



1



2



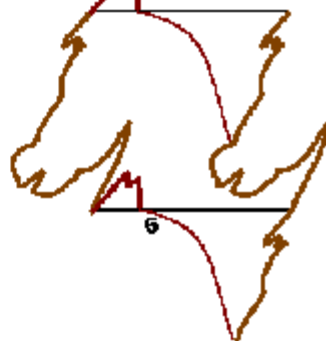
3



4



5



6



7

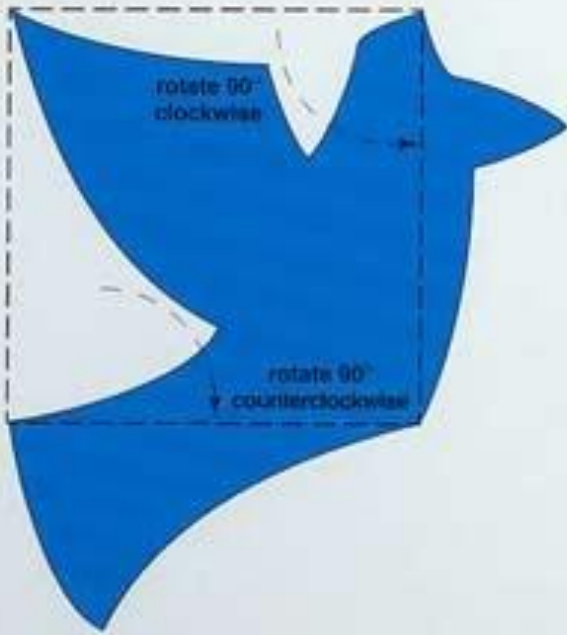


8



9

1. Draw a square (Shift + solid rectangle).
2. Click on Brush and draw a profile (side view) of a horse's head on one side. (The profile of the head of a bird or another animal or person would also work.) Be sure that **the head touches the rectangle at both the top and bottom of one side.**
3. Click on dotted rectangle and draw around that side. This is called "selecting" it. **Select the whole side.** Copy the shape (Ctrl + C). **Click on the lowest box on your tool bar.** This causes the object to be **transparent.** Then paste the shape (Ctrl + V) on the opposite side by dragging the shape into place and lining it up.
4. Click on eraser and erase extra lines on these 2 sides only. The eraser size is adjustable by clicking on the squares under the tools. (You may want to click on View, Zoom, Large Size to erase and then View, Zoom and Normal Size to return.)
5. When drawing on the third side of the square, **draw your shape so that it fits in the existing modified shape.** Failure to do this will cause your shapes to overlap and then it will not tessellate.
6. Repeat steps 2 through 4 for copying the shape from the third side to the fourth side. (Do not make a mirror image.)
7. Click on the eraser and erase lines outside of the shape.
8. Color the shape by drawing designs and filling with color (paint bucket).
9. Select the shape (dotted rectangle), copy (Ctrl + C) and paste (Ctrl + V). Using Fill (paint bucket) color the copy with contrasting colors. Save your work and now use the two contrasting fish to tessellate a page using the copy and paste method. **Remember: For every bump on one side, make a hole on the opposite side.**
- 10.

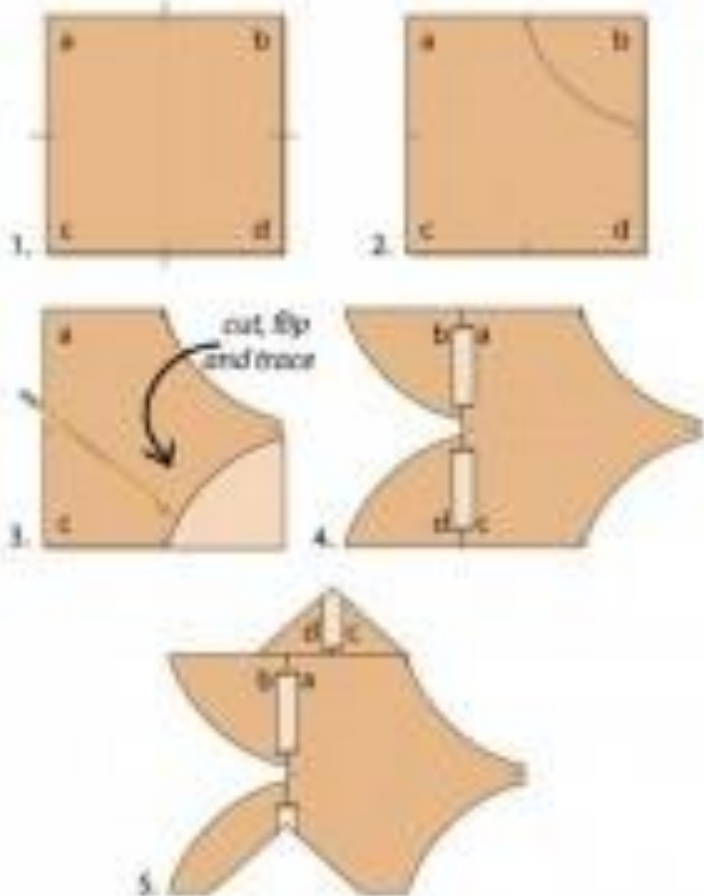


Rotation template



Rotation pattern

Fish Tessellation



A tessellation is a collection of shapes that fill a paper with no overlaps and no gaps. I like the math and artistic skills they require, and am happy to say that this design is my very own.

1. Start with a card stock square, at least 3" wide. Label the four corners. Measure and mark the middle of each side of the square.
2. On the top right corner, draw and cut out a curve, leaving a little flat space that I call the "nose".
3. The top curve piece is flopped and traced to make a symmetrical version below. Cut out the shape.

4. Both curved shapes are aligned and slide to the back of the square as shown. Tape in place. It is VERY important that the numbers read as shown as flopped and rotated shapes will not fit together when complete.
5. Cut one equilateral triangle from the bottom of the shape. It is slid to the top, aligned with the front of the fish and taped in place.
6. Place your fish on at least a 9" x 12" drawing paper, and trace. It's best to make one row going across the paper first, and then add rows on top, always interlocking the shapes when tracing. Lastly, trace the lines in black marker and color with crayon. See artwork by M.C. Escher to get inspired for more complex tessellations.